



# Northeastern College

January

1922

## CATALOG of the School *of* Engineering

1922-1923

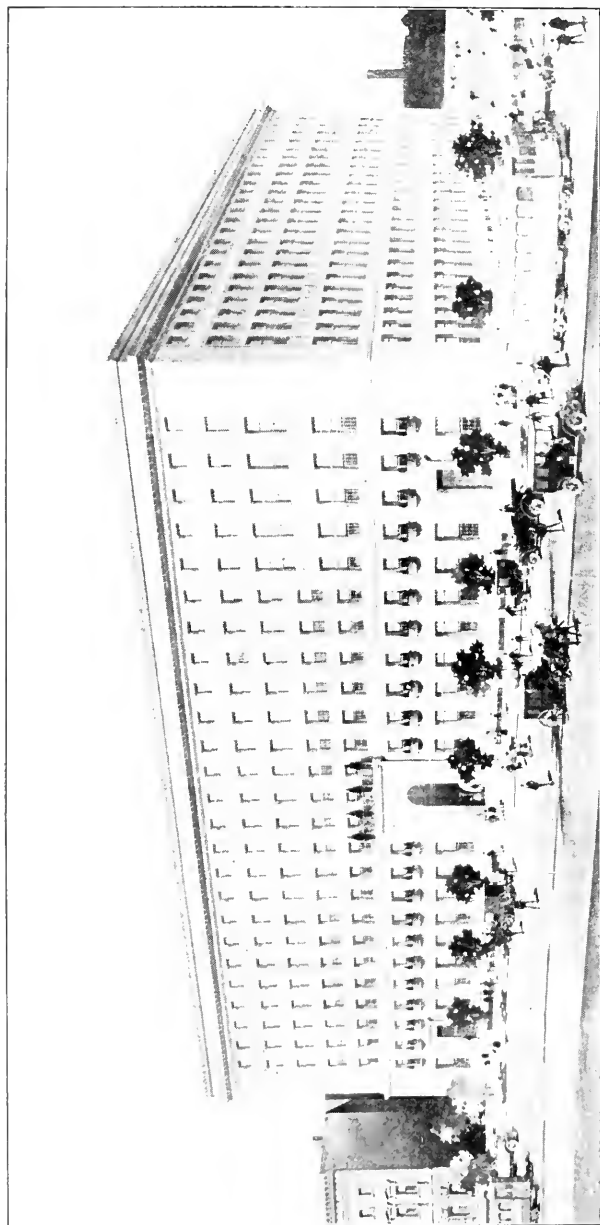
**NORTHEASTERN COLLEGE**

**Boston Young Men's Christian  
Association**

Number 316 Huntington Ave., Boston, Massachusetts







ASSOCIATION BUILDING  
NORTHEASTERN COLLEGE  
(MAIN BUILDING)

# Northeastern College

## CATALOG

*of the*

## School of Engineering

Co-operative Plan



1922-1923

NORTHEASTERN COLLEGE

Boston Young Men's Christian Association

# YEARLY CALENDAR

## *of School Sessions*

1922

1923

JANUARY							JULY						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
1	2	3	4	5	6	7	1	2	3	4	5	6	7
8	9	10	11	12	13	14	8	9	10	11	12	13	14
15	16	17	18	19	20	21	15	16	17	18	19	20	21
22	23	24	25	26	27	28	22	23	24	25	26	27	28
29	30	31					29	30	31				
FEBRUARY							AUGUST						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
1	2	3	4	5	6	7	1	2	3	4	5	6	7
8	9	10	11	12	13	14	8	9	10	11	12	13	14
15	16	17	18	19	20	21	15	16	17	18	19	20	21
22	23	24	25	26	27	28	22	23	24	25	26	27	28
29	30	31					29	30	31				
MARCH							SEPTEMBER						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
1	2	3	4	5	6	7	1	2	3	4	5	6	7
8	9	10	11	12	13	14	8	9	10	11	12	13	14
15	16	17	18	19	20	21	15	16	17	18	19	20	21
22	23	24	25	26	27	28	22	23	24	25	26	27	28
29	30	31					29	30	31				
APRIL							OCTOBER						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
1	2	3	4	5	6	7	1	2	3	4	5	6	7
8	9	10	11	12	13	14	8	9	10	11	12	13	14
15	16	17	18	19	20	21	15	16	17	18	19	20	21
22	23	24	25	26	27	28	22	23	24	25	26	27	28
29	30	31					29	30	31				
MAY							NOVEMBER						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
1	2	3	4	5	6	7	1	2	3	4	5	6	7
8	9	10	11	12	13	14	8	9	10	11	12	13	14
15	16	17	18	19	20	21	15	16	17	18	19	20	21
22	23	24	25	26	27	28	22	23	24	25	26	27	28
29	30	31					29	30	31				
JUNE							DECEMBER						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
1	2	3	4	5	6	7	1	2	3	4	5	6	7
8	9	10	11	12	13	14	8	9	10	11	12	13	14
15	16	17	18	19	20	21	15	16	17	18	19	20	21
22	23	24	25	26	27	28	22	23	24	25	26	27	28
29	30	31					29	30	31				

JANUARY							JULY						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
1	2	3	4	5	6	7	1	2	3	4	5	6	7
8	9	10	11	12	13	14	8	9	10	11	12	13	14
15	16	17	18	19	20	21	15	16	17	18	19	20	21
22	23	24	25	26	27	28	22	23	24	25	26	27	28
29	30	31					29	30	31				
FEBRUARY							AUGUST						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
1	2	3	4	5	6	7	1	2	3	4	5	6	7
8	9	10	11	12	13	14	8	9	10	11	12	13	14
15	16	17	18	19	20	21	15	16	17	18	19	20	21
22	23	24	25	26	27	28	22	23	24	25	26	27	28
29	30	31					29	30	31				
MARCH							SEPTEMBER						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
1	2	3	4	5	6	7	1	2	3	4	5	6	7
8	9	10	11	12	13	14	8	9	10	11	12	13	14
15	16	17	18	19	20	21	15	16	17	18	19	20	21
22	23	24	25	26	27	28	22	23	24	25	26	27	28
29	30	31					29	30	31				
APRIL							OCTOBER						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
1	2	3	4	5	6	7	1	2	3	4	5	6	7
8	9	10	11	12	13	14	8	9	10	11	12	13	14
15	16	17	18	19	20	21	15	16	17	18	19	20	21
22	23	24	25	26	27	28	22	23	24	25	26	27	28
29	30	31					29	30	31				
MAY							NOVEMBER						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
1	2	3	4	5	6	7	1	2	3	4	5	6	7
8	9	10	11	12	13	14	8	9	10	11	12	13	14
15	16	17	18	19	20	21	15	16	17	18	19	20	21
22	23	24	25	26	27	28	22	23	24	25	26	27	28
29	30	31					29	30	31				
JUNE							DECEMBER						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
1	2	3	4	5	6	7	1	2	3	4	5	6	7
8	9	10	11	12	13	14	8	9	10	11	12	13	14
15	16	17	18	19	20	21	15	16	17	18	19	20	21
22	23	24	25	26	27	28	22	23	24	25	26	27	28
29	30	31					29	30	31				

School Periods for Division A indicated by type thus: 1 2 3.

School Periods for Division B indicated by type thus: 1 2 3.

Periods when School is not in session indicated by type thus: 1 2 3.

# YEARLY CALENDAR

*of Engineering Practice Periods  
for Upper-Classmen*

1922

1923

JANUARY							JULY						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
1	2	3	4	5	6	7	...	...	...	...	...	...	1
8	9	10	11	12	13	14	2	3	4	5	6	7	8
15	16	17	18	19	20	21	9	10	11	12	13	14	15
22	23	24	25	26	27	28	16	17	18	19	20	21	22
29	30	31	...	...	...	...	23	24	25	26	27	28	29
...	...	...	...	...	...	...	30	31	...	...	...	...	...
FEBRUARY							AUGUST						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
...	...	...	1	2	3	4	...	...	1	2	3	4	5
5	6	7	8	9	10	11	6	7	8	9	10	11	12
12	13	14	15	16	17	18	13	14	15	16	17	18	19
19	20	21	22	23	24	25	20	21	22	23	24	25	26
26	27	28	...	...	...	...	27	28	29	30	31	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...
MARCH							SEPTEMBER						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
...	...	...	1	2	3	4	...	...	...	...	1	2	3
5	6	7	8	9	10	11	3	4	5	6	7	8	9
12	13	14	15	16	17	18	10	11	12	13	14	15	16
19	20	21	22	23	24	25	17	18	19	20	21	22	23
26	27	28	29	30	31	...	24	25	26	27	28	29	30
...	...	...	...	...	...	...	...	...	...	...	...	...	...
APRIL							OCTOBER						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
...	...	...	...	...	1	2	1	2	3	4	5	6	7
2	3	4	5	6	7	8	8	9	10	11	12	13	14
9	10	11	12	13	14	15	15	16	17	18	19	20	21
16	17	18	19	20	21	22	22	23	24	25	26	27	28
23	24	25	26	27	28	29	29	30	31	...	...	...	...
30	...	...	...	...	...	...	...	...	...	...	...	...	...
MAY							NOVEMBER						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
...	1	2	3	4	5	6	...	...	1	2	3	4	5
7	8	9	10	11	12	13	5	6	7	8	9	10	11
14	15	16	17	18	19	20	12	13	14	15	16	17	18
21	22	23	24	25	26	27	19	20	21	22	23	24	25
28	29	30	31	...	...	...	26	27	28	29	30	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...
JUNE							DECEMBER						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
...	...	...	...	1	2	3	...	...	...	...	1	2	3
4	5	6	7	8	9	10	3	4	5	6	7	8	9
11	12	13	14	15	16	17	10	11	12	13	14	15	16
18	19	20	21	22	23	24	17	18	19	20	21	22	23
25	26	27	28	29	30	...	24	25	26	27	28	29	30
...	...	...	...	...	...	...	31	...	...	...	...	...	...

JANUARY							JULY						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
...	1	2	3	4	5	6	...	...	...	...	...	...	1
7	8	9	10	11	12	13	8	9	10	11	12	13	14
14	15	16	17	18	19	20	15	16	17	18	19	20	21
21	22	23	24	25	26	27	22	23	24	25	26	27	28
28	29	30	31	...	...	...	29	30	31	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...
FEBRUARY							AUGUST						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
...	...	...	1	2	3	4	...	...	...	1	2	3	4
5	6	7	8	9	10	11	5	6	7	8	9	10	11
12	13	14	15	16	17	18	12	13	14	15	16	17	18
19	20	21	22	23	24	25	19	20	21	22	23	24	25
26	27	28	...	...	...	...	26	27	28	29	30	31	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...
MARCH							SEPTEMBER						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
...	...	...	1	2	3	4	...	...	...	...	1	2	3
5	6	7	8	9	10	11	2	3	4	5	6	7	8
12	13	14	15	16	17	18	9	10	11	12	13	14	15
19	20	21	22	23	24	25	16	17	18	19	20	21	22
26	27	28	29	30	31	...	23	24	25	26	27	28	29
...	...	...	...	...	...	...	30	...	...	...	...	...	...
APRIL							OCTOBER						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
1	2	3	4	5	6	7	...	...	1	2	3	4	5
8	9	10	11	12	13	14	7	8	9	10	11	12	13
15	16	17	18	19	20	21	14	15	16	17	18	19	20
22	23	24	25	26	27	28	21	22	23	24	25	26	27
29	30	...	...	...	...	...	28	29	30	31	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...
MAY							NOVEMBER						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
...	1	2	3	4	5	6	...	...	...	1	2	3	4
7	8	9	10	11	12	13	5	6	7	8	9	10	11
14	15	16	17	18	19	20	12	13	14	15	16	17	18
21	22	23	24	25	26	27	19	20	21	22	23	24	25
28	29	30	31	...	...	...	26	27	28	29	30	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...
JUNE							DECEMBER						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
...	...	...	...	1	2	3	...	...	...	...	1	2	3
4	5	6	7	8	9	10	3	4	5	6	7	8	9
11	12	13	14	15	16	17	10	11	12	13	14	15	16
18	19	20	21	22	23	24	17	18	19	20	21	22	23
25	26	27	28	29	30	...	24	25	26	27	28	29	30
...	...	...	...	...	...	...	31	...	...	...	...	...	...

Engineering Practice Periods for Division A indicated by type thus: 1 2 3.  
Engineering Practice Periods for Division B indicated by type thus: 1 2 3.  
Sundays and Holidays indicated by type thus: 1 2 3.

## CALENDAR, 1922-1923

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### General Notes

Division B is at Engineering Practice while Division A is at school.

Division A is at Engineering Practice while Division B is at school.

Periods at school or at Engineering Practice are shown by different kinds of type on Yearly Calendars.

First-year students co-operate on the twenty-week plan.

Students above the first year co-operate on the five-week plan.

All Engineering Practice periods for upperclassmen are of five weeks' duration, except in summer, when one period for each division is six weeks.

All students while at Engineering Practice have no holidays except those regularly allowed by employing firms.

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### Special Notes for 1922

June 19-July 29 Division B at Engineering Practice.

July 31-September 9 Division A at Engineering Practice.

July 10-July 29 Summer Vacation for Division A.

July 31-August 19 Summer Vacation for Division B.

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## CALENDAR, 1922

January 2, Monday

Observance of New Year's Day (School exercises omitted)

January 19, Thursday

Entrance examinations

January 30, Monday

Third Period (Second Semester) begins for Division A Upperclassmen

Opening of First Semester for Division B Freshmen

February 22, Wednesday

Washington's Birthday (School exercises omitted)

March 6, Monday

Third Period (Second Semester) begins for Division B Upperclassmen

Second Period begins for Division B Freshmen

April 6-7-8, Thursday, Friday, Saturday

School exercises omitted

April 10, Monday

Fourth Period begins for Division A Upperclassmen

Third Period (Second Semester) begins for Division B Freshmen

April 17-18, Monday, Tuesday

School exercises omitted



## Calendar, 1922-1923

*(Continued)*

- April 19, Wednesday  
Patriot's Day (School exercises omitted)
- May 15, Monday  
Fourth Period begins for Division B
- May 29, Monday  
School exercises omitted
- May 30, Tuesday  
Memorial Day (School exercises omitted)
- June 15, Thursday  
Entrance examinations
- June 17, Saturday  
Bunker Hill Day (School exercises omitted)
- June 18, Sunday  
Baccalaureate Sermon
- June 19, Monday  
Summer Term begins for Division A Upperclassmen  
Summer Term begins for Division B Freshmen
- June 21, Wednesday  
Annual Commencement
- July 4, Tuesday  
Independence Day (School exercises omitted)
- August 21, Monday  
Summer Term begins for Division B Upperclassmen  
Summer Term begins for Division A Freshmen
- September 4, Monday  
Labor Day (School exercises omitted)
- September 7, Thursday  
Entrance examinations
- September 11, Monday  
Opening of the First Semester for Division A
- October 12, Thursday  
Columbus Day (School exercises omitted)
- October 16, Monday  
Opening of the First Semester for Division B Upperclassmen  
Second Period begins for Division A Freshmen
- November 20, Monday  
Second Period begins for Division A Upperclassmen  
Third Period (Second Semester) begins for Division A Freshmen
- November 30, Thursday  
Thanksgiving Day (School exercises omitted)
- December 22-26, Thursday-Monday, inclusive  
Christmas Recess
- December 27, Tuesday  
Second Period begins for Division B. Upperclassmen  
Fourth Period begins for Division A Freshmen

## **Calendar, 1922-1923**

*(Continued)*

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### **Special Notes for 1923**

June 18-July 28 Division B at Engineering Practice

July 30-September 8 Division A at Engineering Practice

July 9-July 28 Summer Vacations for Division A

July 30-August 18 Summer Vacations for Division B

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### **CALENDAR, 1923**

January 1, Monday

New Year's Day (School exercises omitted)

January 18, Thursday

Entrance Examinations

January 29, Monday

Opening of the First Semester for Division B Freshmen

Third Period (Second Semester) begins for Division A Upperclassmen

February 22, Thursday

Washington's Birthday (School exercises omitted)

March 5, Monday

Third Period (Second Semester) begins for Division B Upperclassmen

Second Period begins for Division B Freshmen

April 5, 6, 7, Thursday, Friday, Saturday

School exercises omitted

April 9, Monday

Fourth Period begins for Division A Upperclassmen

Third Period (Second Semester) begins for Division B Freshmen

April 19, Thursday

Patriot's Day (School exercises omitted)

April 20, 21 Friday, Saturday

School exercises omitted

May 14, Monday

Fourth Period begins for Division B

May 30, Wednesday

Memorial Day (School exercises omitted)

June 14, Thursday

Entrance Examinations

## Calendar, 1922-1923

*(Continued)*

- June 17, Sunday  
Baccalaureate Sermon
- June 18, Monday  
Observance of Bunker Hill Day (School exercises omitted)
- June 19, Tuesday  
Summer Term begins for Division A Upperclassmen  
Summer Term begins for Division B Freshmen
- June 20, Wednesday  
Annual Commencement
- July 4, Wednesday  
Independence Day (School exercises omitted)
- August 21, Tuesday  
Summer Term begins for Division B Upperclassmen  
Summer Term begins for Division A Freshmen
- September 3, Monday  
Labor Day (School exercises omitted)
- September 6, Thursday  
Entrance Examinations
- September 10, Monday  
Opening of the First Semester for Division A
- October 12, Friday  
Columbus Day (School exercises omitted)
- October 13, Saturday  
School exercises omitted
- October 15, Monday  
Opening of First Semester for Division B Upperclassmen  
Second Period begins for Division A Freshmen
- November 19, Monday  
Second Period begins for Division A Upperclassmen  
Third Period (Second Semester) begins for Division A Freshmen
- November 29, Thursday  
Thanksgiving Day (School exercises omitted)
- December 24, Monday  
School exercises omitted
- December 25, Tuesday  
Christmas Day (School exercises omitted)
- December 26, Wednesday  
Second Period begins for Division B Upperclassmen  
Fourth Period begins for Division A Freshmen

# Northeastern College

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## The Trustees

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1ST VICE-PRESIDENT

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SABIN POND SANGER

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HENRY WHITING NEWHALL

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WILLIAM EVERETT MACURDA

FRANK PALMER SPEARE

FRANCIS ROBERT CARNEGIE STEELE

# Northeastern College

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## OFFICERS

FRANK PALMER SPEARE, LL.B., M.H.  
President of the College

GALEN DAVID LIGHT, A.B.  
General Assistant to the President and Secretary of the College

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## THE EXECUTIVE COUNCIL

FRANK PALMER SPEARE, LL.B., M.H.  
President of the College

GALEN DAVID LIGHT, A.B.  
Secretary of the College

CARL STEPHENS ELL, A.B., M.S.  
Dean of the School of Engineering and the Evening Polytechnic School

EVERETT AVERY CHURCHILL, A.B., Ed.M.  
Assistant to the President and Dean of the School of Law

FRED MILLER, B.S., B.Litt.  
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Regional Director

IRA ARTHUR FLINNER, A.B., A.M.  
Superintendent of Secondary Schools

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Director of Vocational Institute

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## \*STANDING COMMITTEES OF THE COUNCIL

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COMMITTEE ON CURRICULUMS  
Carl S. Ell, *Chairman*

COMMITTEE ON COMMENCEMENT  
Galen D. Light, *Chairman*

COMMITTEE ON CATALOGS  
Carl D. Smith, *Chairman*

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\*The President and Secretary are, *ex-officio*, members of all committees.

# Northeastern College

## SCHOOL OF ENGINEERING

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### FACULTY OF THE SCHOOL

CARL STEPHENS ELL, A.B., M.S., Dean 52 Clement Ave., West Roxbury  
*Professor of Civil Engineering*

#### PROFESSORS

HENRY BISSELL ALVORD, S.B. 32 Hollis St., South Weymouth  
*Professor of Civil Engineering*

GEORGE FRANCIS ASHLEY 163 Summer St., Somerville  
*Professor of Drawing*

JOSEPH ARTHUR COOLIDGE, S.B. 20 Martin St., Cambridge  
*Professor of Physics*

PEARL WHITEFIELD DURKEE, S.B. 39 Windsor St., Arlington  
*Professor of Electrical Measurements*

CARL STEPHENS ELL, A.B., M.S. 52 Clement Ave., West Roxbury  
*Professor of Civil Engineering*

WILLIAM LINCOLN SMITH, S.B. 4 Academy Lane, Concord  
*Professor of Electrical Engineering*

JOSEPH SPEAR, A.B. 141 Chiswick Road, Brighton  
*Professor of Mathematics*

JOSEPH WILLIAM ZELLER, S.B. West Newton, Mass.  
*Professor of Mechanical Engineering*

#### ASSISTANT PROFESSORS

PERCY FRANCIS BENEDICT, S.B. 491 Belmont St., Belmont  
*Assistant Professor of Administrative Engineering*

ALFRED JOHN FERRETTI, S.B. 92 Church St., Lynn  
*Assistant Professor of Mechanical Engineering*

GEORGE BLODGETT GEE, C.E. 17 Pine St., Belmont  
*Assistant Professor of Drawing*

HAROLD WESLEY MELVIN, A.B. 76 Standish Ave., Wollaston  
*Assistant Professor of English*

WINTHROP ELIOT NIGHTINGALE, A.B., S.B. 73 Hovey St., Watertown  
*Assistant Professor of Civil Engineering*

JOHN BUTLER PUGSLEY, A.B. 23 Hardy Ave., Watertown  
*Assistant Professor of Mathematics*

# Northeastern College

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## FACULTY OF THE SCHOOL

(Continued)

SAMUEL ABBOTT SMITH STRAHAN <i>Assistant Professor of Chemistry</i>	26 Hemenway St., Boston
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### INSTRUCTORS

CHESTER PACKARD BAKER, B.Ch.E. <i>Instructor in Chemical Engineering</i>	53 Wendell Ave., Brockton
CHESTER JAMES GINDER <i>Instructor in Civil Engineering</i>	23 Russell St., Everett
MAURICE ELMER GOODRIDGE, S.B. <i>Instructor in Administrative Engineering</i>	463 Lebanon St., Melrose
EMIL ANTON GRAMSTORFF, S.B. <i>Instructor in Mechanical Drawing</i>	Farmcrest Ave., Lexington
JAMES WARREN INGALLS, S.B., C.E. <i>Instructor in Civil Engineering</i>	63 Graves St., East Lynn
MADISON PETERS JEFFERY, A.B. <i>Instructor in English</i>	58 Glenwood St., Malden
ERNEST FRED PERKINS, S.B., M.S. <i>Instructor in Chemical Engineering</i>	153 East Emerson St., Melrose
ROLAND GUYER PORTER, B.E.E. <i>Instructor in Electrical Engineering</i>	317 Common St., Watertown
HENRY EDWARD RICHARDS, S.B. <i>Instructor in Electrical Engineering</i>	Lynnfield Center, Mass.
JOHN JAMES SINNETT <i>Instructor in Physical Training</i>	24 Bardwell St., Jamaica Plain
FREDERICK ARLINGTON STEARNS, S.B. <i>Instructor in Mechanical Engineering</i>	208 Grove St., Melrose

# Northeastern College

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## FACULTY OF THE SCHOOL

(Continued)

### ASSISTANTS

CHARLES REID ALLAN <i>Assistant in Physics</i>	37 Hawthorne Road, Pittsfield
THEODORE BENJAMIN BLISS <i>Assistant in Chemistry</i>	75 Prince St., Jamaica Plain
WILLIAM ROBERT CLARKE <i>Assistant in Physics</i>	216 So. Whittlesey Ave., Wallingford, Conn.
GORDON BYAM ELDRIDGE <i>Assistant in Chemistry</i>	Nine Acre Corner, Concord
ARTHUR EDWARD HARDING <i>Assistant in Civil Engineering</i>	111 Gainsborough St., Boston
EDWARD SNOW PARSONS <i>Assistant in Civil Engineering</i>	705 Washington St., Gloucester
ROBERT FLETCHER REED <i>Assistant in Physics</i>	Granville Ferry, Nova Scotia
CHARLES CLIFTON RUSSELL, JR. <i>Assistant in Electrical Engineering</i>	21 Eliot St., Quincy
HENRY PHILIP SHOPNECK <i>Assistant in Chemistry</i>	100 Woodward Ave., Dorchester
BENJAMIN LINCOLN SMITH <i>Assistant in Electrical Engineering</i>	4 Academy Lane, Concord
GEORGE HENRY WETMORE <i>Assistant in Physics</i>	15 Glendale St., Peabody



# Northeastern College

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## ADMINISTRATIVE OFFICERS OF THE SCHOOL OF ENGINEERING

CARL STEPHENS ELL, A.B., M.S. <i>Dean</i>	52 Clement Ave., West Roxbury
JOHN BUTLER PUGSLEY, A.B. <i>Registrar</i>	23 Hardy Ave., Watertown
WINTHROP ELIOT NIGHTINGALE, A.B., S.B. <i>Director of Engineering Practice</i>	73 Hovey St., Watertown
JOSEPH SPEAR, A.B. <i>Director of Student Activities</i>	141 Chiswick Road, Brighton
HAROLD WESLEY MELVIN, A.B. <i>Director of Student Publications</i>	76 Standish Ave., Wollaston
MADISON PETERS JEFFERY, A.B. <i>Director of Athletics</i>	58 Glenwood St., Malden
MAURICE ELMER GOODRIDGE, S.B. <i>Assistant Director of Engineering Practice</i>	463 Lebanon St., Melrose
CHESTER JAMES GINDER <i>Assistant to the Dean</i>	23 Russell St., Everett
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BESSIE FREETHEY ALLEN <i>Bookkeeper</i>	268 Brookline Ave., Boston
ANNIE LAURIE CORBETT <i>Secretary to the Dean</i>	88 Melrose St., Melrose Highlands
EDNA JANE GARRABRANT <i>Secretary to the Director of Engineering Practice</i>	120 Hancock St., Cambridge
MYRTLE MARKS <i>Stenographer</i>	580 Commonwealth Ave., Boston
JESSIE MARY PAINE <i>Secretary to the Registrar</i>	91 Perkins St., East Somerville
ROSA MARIE PENDLETON <i>Secretary to the Director of Student Activities</i>	183 Winthrop St., Winthrop
DOROTHY CLARA PETERS <i>Assistant Librarian</i>	189 Huntington Ave., Boston
ALICE BELLE SWASEY <i>Recorder</i>	8 Teele Ave., West Somerville
MYRA EDNA WHITE <i>Librarian</i>	189 Huntington Ave., Boston
ELLEN MARGARET PORTER WHITEHOUSE, <i>Assistant to the Bursar</i>	66 Everett St., Arlington

# Northeastern College

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## DEPARTMENTS OF THE SCHOOL

### MAIN DEPARTMENTS

#### SCHOOL ADMINISTRATION

*Professor Pugsley, in charge*

#### ENGINEERING PRACTICE

*Professor Nightingale, in charge*

#### STUDENT ACTIVITIES

*Professor Spear, in charge*

### PROFESSIONAL DEPARTMENTS

#### CIVIL ENGINEERING

*Professor Alvord, in charge*

#### MECHANICAL ENGINEERING

*Professor Zeller, in charge*

#### ELECTRICAL ENGINEERING

*Professor Smith, in charge*

#### CHEMICAL ENGINEERING

*Professor Strahan, in charge*

### GENERAL DEPARTMENTS

#### DRAWING

*Professor Ashley in charge,*

#### ENGLISH

*Professor Melvin, in charge*

#### MATHEMATICS

*Professor Spear, in charge*

#### PHYSICS

*Professor Coolidge, in charge*

# Northeastern College

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## \*COMMITTEES OF THE FACULTY

1922-1923

### EXECUTIVE COMMITTEE

DEAN ELL, *Chairman*

PROFESSOR PUGSLEY

PROFESSOR NIGHTINGALE

PROFESSOR SPEAR

### ADMISSION

DEAN ELL, *Chairman*

PROFESSOR PUGSLEY

PROFESSOR MELVIN

### SCHOLARSHIP

PROFESSOR PUGSLEY, *Chairman*

PROFESSOR COOLIDGE

PROFESSOR SMITH

PROFESSOR NIGHTINGALE

PROFESSOR SPEAR

### ENGINEERING PRACTICE

PROFESSOR NIGHTINGALE, *Chairman*

PROFESSOR ALVORD

PROFESSOR STRAHAN

PROFESSOR SMITH

PROFESSOR ZELLER

### ATHLETICS

PROFESSOR SPEAR, *Chairman*

PROFESSOR PUGSLEY

PROFESSOR ZELLER

MR. JEFFERY

MR. PORTER

### FRATERNITIES

PROFESSOR ASHLEY, *Chairman*

PROFESSOR DURKEE

PROFESSOR BENEDICT

PROFESSOR FERRETTI

PROFESSOR MELVIN

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\*The Dean is, *ex-officio*, a member of all standing committees.

# Northeastern College

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## SPECIAL LECTURERS

JOE MITCHELL CHAPPLE

Editor of the *National Magazine*

"A Man and His Job"

HENRY H. CRANE

Rector of Center Methodist Episcopal Church, Malden, Mass.

"Four Things"

CHARLES W. ELIOT

President Emeritus of Harvard University

"A Useful and Enjoyable Life"

EDWIN H. HUGHES

Bishop, Methodist Episcopal Church, Boston Area

"Money and Education"

EDWARD L. LOGAN

Lawyer

"Civic Responsibilities"

LEMUEL H. MURLIN

President of Boston University

"Theodore Roosevelt"

ROBERT H. NEWCOMB

Executive's Assistant, Boston & Maine Railroad

"Defective Foundations"

PAYSON SMITH

State Commissioner of Education

"Productive Education"

FRANK P. SPEARE

President of Northeastern College

"The Responsibilities of an Educated Man"

HAROLD A. THURLOW

Thurlow Advertising Service

"Are You Growing Bigger?"

DEWITT G. WILCOX

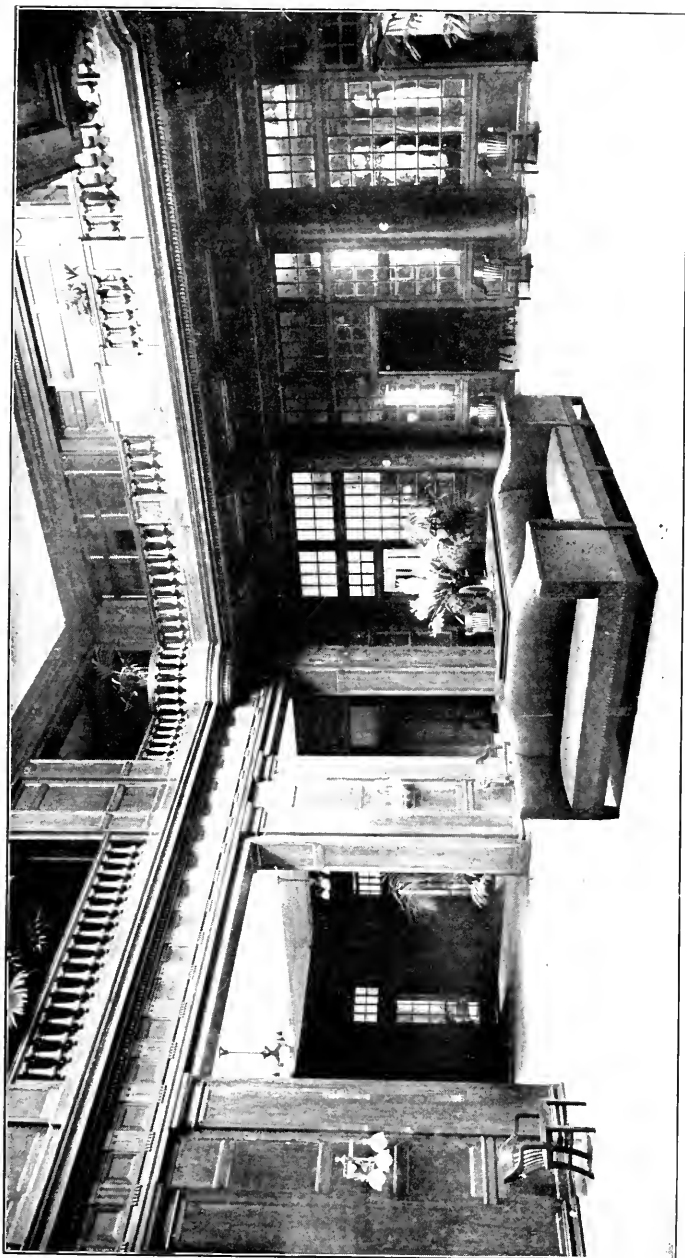
Surgeon

"The Human Brain"

RALPH B. WILSON

Director of Service for Babson's Statistical Organization

"Business Conditions"



THE LOBBY

## Students in Class Work



Class in Mechanical Drawing  
NORTHEASTERN COLLEGE



Class in Surveying Fieldwork  
NORTHEASTERN COLLEGE

## GENERAL INFORMATION

### History of Northeastern College

The incorporation of Northeastern College of the Boston Young Men's Christian Association in March, 1916, marked the culmination of a notable development. The College is not a new institution, but the realization of an ideal carefully worked out and persistently followed for a period of many years.

The Boston Young Men's Christian Association, established in 1851, had, as one of its first lines of endeavor, evening classes for young men. It was not, however, until 1896 that the evening school system was placed upon a permanent basis with expert supervision. As courses were being offered in increasingly large numbers, it became evident that a more complete organization should be effected, with the result that the courses were grouped as separate schools, such additional courses being offered as would complete the curriculums of the several schools.

The School of Law, established in 1898, was incorporated in 1904 with degree granting power. The School of Commerce and Finance, founded in 1907, was incorporated in 1911, with the right to grant the Bachelor and Master of Commercial Science degrees. The School of Engineering was opened in 1909, and received in 1920 the right to grant the following degrees: Bachelor of Civil Engineering, Bachelor of Mechanical Engineering, Bachelor of Electrical Engineering, and Bachelor of Chemical Engineering. Affiliated with the College are the Evening Polytechnic School, the Huntington School for Boys, and the Northeastern Preparatory School.

In the thirteen years that have elapsed, the school, which was started with no special educational requirements for entering students, and which had but little equipment and a registration of only eight pupils, has grown to be a recognized factor in the community, with rigid requirements of scholarship and character for entering students, thousands of dollars' worth of equipment, a highly-trained and able faculty, and an enrollment of over eight hundred students. It is enabling the young man of moderate financial ability to get a college engineering training and at the same time not only to defray

## SCHOOL OF ENGINEERING

his own expenses, but also to become familiar with the actual practice of his profession.

### Object of the School

Technical school instruction, depending on class-room work and laboratories, must always lack some of the vital characteristics of an actual manufacturing plant. One is carried on for educational purposes, while the other is operated for dividends. It is this latter fact that gives the co-operative school idea one great advantage over the usual educational plan. Instead of training the student for several years for work in which he may later find himself entirely unfitted, the School puts the student to work in a commercial plant. There he learns life in its vital issues, as well as the problem of getting along with men, thus early finding out whether he has made a wise or unwise choice of his life work. This training shows him the use and value of his school work, and finally gives him an unusual opportunity to acquire from actual experience that rare characteristic, *executive ability*, without which his life probably would be spent on the lower levels of industry.

The fundamental aim of this School is to give young men sound training in both the theoretical and practical principles upon which professional practice is based. Thus they are enabled to advance farther and more rapidly in their chosen work than they could expect to do without further education than that of a high-school course. The training is not in any sense that of a trade school, but is that of a regular engineering school of high standards.

The School offers five branches of engineering: civil, mechanical, electrical, chemical, and administrative. The end sought is to give to students who have already had a high-school preparation, or its equivalent, a good training in the fundamental sciences of mathematics, chemistry, and physics, and in the important applications of the principles of these sciences to the several branches of engineering. Much stress is laid on the development of the ability to apply the acquired knowledge to new engineering problems, and an effort is made to be thorough without leading the student through a maze of mere mental gymnastics.



## GENERAL INFORMATION

The program of studies differs from that of many schools, in that a student is not permitted a wide range of subjects from which to choose. It has been found that better results are obtained by prescribing the principal studies which the student is to pursue.

### **Plan of Operation of the School**

To illustrate the plan of operation of the School, let us take the case of two men, "A" and "B" who desire to take any one of the various courses offered.

If the men are members of any one of the three upper classes (sophomore, junior, or senior), "B" will be assigned to one of the plants of a firm that is co-operating with the School. Here he receives his practical experience by actual work under School supervision for a period of five weeks. "A" who is called the alternate of "B" has meanwhile been attending classes at the School. At the end of the five-week period, "B" and "A" change places, that is, "B" takes the place of "A" at School, while "A" relieves his alternate at the plant of the employing firm. This process is repeated each period, these same two students alternating on the same job for at least one calendar year.

In the case of freshmen students, the alternating period is of twenty weeks' duration and the practical work is not necessarily of an engineering character. Division B freshmen will ordinarily continue with such employment as they may obtain for themselves up to the time of admission to the class rooms. Division A freshmen will be allowed to assume during their working period any kind of employment that will give promise of best remuneration. With either division, however, the students will be expected, when so advised by the Engineering Practice Department, to take Engineering Practice jobs where the nature of the work does not require any particular previous training.

### **Relation of School to High Schools**

This School is peculiarly adapted to the high school graduate with limited financial resources who still has the ambition and ability to get ahead if given the opportunity.

This year the school has a student body made up of graduates of the following schools:

## SCHOOL OF ENGINEERING

Abington High School	Clinton High School
Alton (N. H.) High School	Cohasset High School
Amherst High School	High School of Commerce
Amesbury High School	Colby (N. H.) Academy
Annapolis Royal Academy	Concord (Mass.) High School
(Granville Ferry, Nova Scotia)	Concord (N. H.) High School
Anson (Me.) Academy	Conway High School
Arlington High School	Cony High School
Ashland High School	(Augusta, Me.)
Athol High School	Cranston (R. I.) High School
Attleboro High School	Dalton High School
Avon High School	Danvers High School
Ayer High School	Dean Academy
Baddeck High School	Dedham High School
(Sidney, Nova Scotia)	Deep River (Conn.) High School
Bangor (Me.) High School	Deering (Me.) High School
Bar Harbor (Me.) High School	Dexter (Me.) High School
Bartlett High School (Webster)	Dorchester High School
Beezazian School (Constantinople,	Drury High School
Turkey)	Dummer Academy
Belfast (Me.) High School	Duxbury High School
Bellows Falls High School	East Boston High School
Belmont High School	East Bridgewater High School
Berkeley Preparatory School	East Towers (Mich.) High School
Berlin (N. H.) High School	Eastport (Me.) High School
Berwick (Me.) Academy	Enfield High School
Beverly High School	(Thompsonville, Conn.)
Boothbay Harbor (Me.) High	English High School
School	Essex County Agricultural School
Boston College High School	Essex (Mass.) High School
Boston Latin High School	Essex (Vt.) High School
Bourne High School	Everett High School
Braintree High School	Exeter (N. H.) High School
Brewster Free Academy	Fair Haven (Vt.) High School
(Wolfeboro, N. H.)	Fairhaven (Mass.) High School
Bridgeport (Conn.) High School	Fall River High School
Bridgewater High School	Fitchburg High School
Brighton High School	Foxboro High School
Bristol (Conn.) High School	Framingham High School
Bristol (Me.) High School	Franklin (Mass.) High School
Brockton High School	Franklin (N. H.) High School
Brookfield High School	Freeport (Me.) High School
Brookline High School	Fryeburg (Me.) Academy
Brunswick (Me.) High School	Gardner High School
Burlington (Vt.) High School	Georgetown High School
Calais (Me.) Academy	Gilman (Me.) High School
Cambridge Latin High School	Gloucester High School
Canaan (Vt.) High School	Gould's Academy (Bethel, Me.)
Canton High School	Greenfield High School
Central High School	Groton High School
(San Juan, Porto Rico)	Groveland High School
Chelmsford High School	Hallowell (Me.) High School
Chelsea High School	Hanover High School
Chester High School	Hardwick (Vt.) Academy
Chicopee High School	Hartford (Conn.) High School

## GENERAL INFORMATION

Haverhill High School	Meriden (Conn.) High School
Hingham High School	Mexico (Me.) High School
Holbrook High School	Middlebury (Vt.) High School
Holden High School	Middletown (Conn.) High School
Holliston High School	Milbridge (Me.) High School
Holyoke High School	Milford High School
Hopedale High School	Milton High School
Horblitt Preparatory School	Monson Academy
Hudson High School	Montpelier (Vt.) Seminary
Huntington School	Montpelier (Vt.) High School
Hyde Park High School	Murdock High School
Island Pond (Vt.) High School	Mt. Hermon School
Jonesport (Me.) High School	Nantucket High School
Keene (N. H.) High School	Nashua (N. H.) High School
Kennebunk (Me.) High School	Natick High School
Kimball High School	Needham High School
Kimball Union (N. H.) Academy	New Britain (Conn.) High School
Kingston High School	New Gloucester (Me.) High School
South Kingston (R. I.) High School	New London (Conn.) High School
Laconia (N. H.) High School	Newburyport High School
Lancaster High School	Newton High School
LaSalle (R. I.) Academy	Newton Vocational School
Lausitz High School (Germany)	North Attleboro High School
Lawrence High School	North Berwick (Me.) High School
Lee High School	Northeastern Secondary School
Leicester High School	Norton High School
Lewis (Conn.) High School	Norwell High School
Lewis & Clark High School (Washington)	Norwood High School
Lewiston (Me.) High School	Nute (N. H.) High School
Lexington High School	Orange High School
Littleboro High School	Pawtucket High School
Livermore Falls (Me.) High School	Peabody High School
Los Angeles (Cal.) High School	Petersham High School
Lowell High School	Petrograd Technical School (Petrograd, Russia)
Lubec (Me.) High School	Phillips Exeter Academy (N. H.)
Lyman Hall (Conn.) High School	Pittsfield High School
Lynn Classical High School	Plainfield (Conn.) High School
Lynn English High School	Plainfield (Mass.) High School
Madison (Me.) High School	Plymouth High School
Maine Central Institute (Me.)	Portland (Me.) High School
Malden High School	Portsmouth (N. H.) High School
Manchester (Mass.) High School	Pratt (Conn.) High School
Manchester (N. H.) High School	Proctor (Vt.) High School
Mansfield High School	Providence Technical High School
Marblehead High School	Provincetown High School
Marlboro High School	Putnam (Conn.) High School
Marshfield High School	Quincy High School
Maynard High School	Reading High School
McKinley (D. C.) High School	Revere High School
Mechanic Arts High School	Richards (N. H.) High School
Medfield High School	Richford (Vt.) High School
Medford High School	Rindge Technical High School
Medway High School	Rochester (N. H.) High School
Melrose High School	Rochester (N. Y.) High School

## *SCHOOL OF ENGINEERING*

Rockland High School	Townshend (Vt.) High School
Rumford (Me.) High School	Traip (Me.) Academy
Sacred Heart High School (R. I.)	Upton High School
Salem High School	Vinalhaven (Me.) High School
Sanderson Academy	Wakefield High School
Sanford (Me.) High School	Walpole High School
Saugus High School	Waltham High School
Schuylerville (N. Y.) High School	Wareham High School
Scituate High School	Waterbury (Vt.) High School
Sharon High School	Watertown High School
Shrewsbury High School	Wellesley High School
Simsbury (Conn.) High School	West Hartford (Conn.) High School
Skowhegan (Me.) High School	West Roxbury High School
Solon (Me.) High School	West Springfield High School
Somerset High School	Westbrook (Me.) Seminary
Somersworth (N. H.) High School	Westfield High School
Somerville High School	Westinghouse High School
South Boston High School	Weymouth High School
Springfield Technical High School	Whitman High School
Springfield Central High School	Williamstown High School
Stephens (Me.) High School	Williston Seminary
Stevens (N. H.) High School	Wilmington High School
Stoneham High School	Wilton (N. H.) High School
Stonington (Conn.) High School	Windham (Conn.) High School
Stoughton High School	Windsor (Vt.) High School
Stowe High School	Winthrop High School
Strong (Me.) High School	Woburn High School
Sudbury High School	Woodstock (Conn.) Academy
Sutton High School	Woodstock (Vt.) High School
Swampscott High School	Woodsville (N. H.) High School
Taunton High School	Worcester Classical High School
Templeton High School	Worcester Commercial High School
Thayer Academy	Worcester South High School
Thompson High School (Conn.)	Worcester Trade School
Tilton (N. H.) Seminary	York (Me.) High School
Torrington (Conn.) High School	

## *EQUIPMENT OF THE SCHOOL*

### **ENGINEERING EQUIPMENT**

#### **Field Instruments of Civil Engineering**

For work in the field, the Civil Engineering Department possesses various surveying instruments, representing the principal makes and types in general use. The equipment includes two Keuffel & Esser transits, two Buff & Buff transits, two Berger levels, two other levels, and three plane table outfits. There are Locke hand levels, flag poles, leveling rods, stadia rods, engineers' and surveyors' chains, steel and cloth tapes, and all the miscellaneous equipment necessary to outfit the parties that the instruments will accommodate. The transits are equipped with neutral glasses and reflectors for astronomical observations. For higher surveying there is an aneroid barometer for barometric leveling, a sextant for hydrographic surveying, and a Gurley electric current meter for hydraulic measurements.

The extent of the equipment and scope of the field work itself are designed to train the student's judgment as to the relative merits of the various types of field instruments.

#### **Mechanical Laboratories**

The steam power plant is completely equipped with meters, scales, indicators, Orsat apparatus, one CO<sub>2</sub> recorder, and all other equipment necessary for making complete power plant tests. The plant consists of four horizontal-return tubular boilers, two of which are equipped for burning fuel oil and two for burning coal; and four three wire generators, of which three are driven by Ridgway reciprocating steam engines of various sizes, and the other is direct connected to a Westinghouse-Parsons turbine. This places at the disposal of our classes a well-equipped, up-to-date engineering laboratory, and gives them the means of carrying on boiler tests, determining the efficiencies of various fuels and oils, taking indicator diagrams, determining the efficiency of modern reciprocating engines and turbines when direct connected to generators, as well as renders them familiar with all the various auxiliary appliances of such a plant, as separators, pumps, air compressors. Apparatus is also available for slide valve setting, gauge testing, measuring flow of air, steam, and water, and Prony brake testing.

### **Electrical Measurements Laboratory**

The laboratory was entirely rebuilt during the summer of 1920. It is equipped with apparatus fundamentally planned for teaching the principles of measurement, rather than for the precise determination of quantitative results. Nevertheless it is necessary for the proper performance of work in the other laboratory courses that a certain amount of careful quantitative work should be done, and the equipment is being steadily increased and developed with both ends held in view.

A partial list of the apparatus available for instruction is the following. Under the first head, resistance by Ohm's law, substitution and direct reflection, voltmeter methods for high resistance, insulation resistance, specific resistance, slide wire bridge, electrostatic capacity, inductance, Poggendorf's method of E. M. F. comparison. Under the second head, a Laboratory standard Wheatstone bridge, a Kelvin low resistance bridge, a Leeds Northrup potentiometer with two standard Weston cells, volt box and steady source of high voltage for voltmeter calibration, a commutator, and leads for use with the Carey-Foster method, and a chemical balance.

The instrument room is supplied with 18 high-grade G. E. and Weston ammeters and voltmeters of various sizes for D. C. work, together with numerous similar instruments of cheaper quality for lower class work.

For A. C. testing, there are 27 voltmeters and ammeters of various sizes arranged in groups of three for polyphase work, and 8 single or three phase wattmeters.

There is also a considerable amount of auxiliary apparatus such as frequency indicators, synchroscopes, and power factor meters.

### **Electrical Engineering Laboratory**

The Laboratory was entirely remodeled during the summer of 1920. It is equipped with numerous machines of different types, the size and voltage ratings being selected to reduce as much as possible the risk from large voltage and power apparatus, while at the same time making available to the student commercial apparatus such that the various quantities it is desired to measure will be of reasonable dimensions.

## *EQUIPMENT OF THE SCHOOL*

Moderate-sized machines are used principally for this reason, but also because the students in their Engineering Practice come into contact with the large-sized and varied machinery of modern power houses and electrical plants generally.

Among the machines of this department are a pair of matched Holtzer-Cabot 5 kv-a synchronous converters, specially planned to operate as 3 phase generators, motors, or double current generators. They are driven independently by 10 HP 220-volt General Electric interpole motors, and may also be mechanically coupled for certain work.

There is also a pair of matched and specially designed direct current generators of 6 kilowatt rating at 220 volts, which may be operated either shunt or compound, driven by a 15 kilowatt interpole Sprague motor with double extended shaft. These machines are particularly intended for work on characteristics and parallel operation, but may also be coupled so as to be available in the various "pumping back" methods of testing.

Alternating current is supplied by a three phase General Electric 15 kv-a alternator, giving practically a pure sine wave, driven by a 20 kw Westinghouse motor; there is also a 7.5 kv-a General Electric alternator driven from a 15 HP Sprague motor, fitted with taps from each armature coil, a 5 kv-a Holtzer-Cabot machine with two spare rotors, making it available either as a generator, synchronous motor, squirrel cage or phase wound induction motor; and a dozen or so more motors and generators of various sizes and types.

There are two sets of G. E. type H transformers, three to the set, of 3 kv-a rating with primary voltage of 550 and secondary of 220-110, which may be used for transmission experiments as well as ordinary testing, and a very considerable assortment of variable ratio transformers, reactances, condensers, and similar control and testing apparatus aside from the very complete line of instruments belonging to the Electrical Measurements Laboratory.

### **Chemical Laboratories**

The School has three laboratories completely equipped in all respects for carrying on all lines of chemical work, from

## *SCHOOL OF ENGINEERING*

that of a high school to that of most advanced college grade. They have accommodations for over one hundred and fifty students, and are suitably furnished with all the necessary appliances for chemical work. Some of these are: hoods, drying closets, a still, steam and hot water baths, electrolytic circuits, vacuum and pressure apparatus, balances, combustion furnaces, and complete sets of apparatus for the sampling and analysis of flue gases and fuels. There are also testing machines for oils, viscosimeters, and different sorts of flash point apparatus. A chemical museum is connected with this department where are kept specimens for purposes of illustration.

### **Design and Drafting Rooms**

The School possesses large, light, and well-equipped drawing rooms for the carrying on of the designing and drafting which form so important a part of engineering work. These rooms are supplied with lockers containing the drawing supplies, and files containing blue prints, and photographs of machines and structures that represent the best practice.

### **Physics Laboratories**

The Physics Department has two large laboratories completely equipped with all necessary apparatus for the experimental work that is required of the students, as well as that required for lecture demonstration. The apparatus and equipment includes verniers, levels, vacuum pump, planimeters, spherometers, calorimeters, thermometers, pyrometer, sonometer, spectroscope, spectrometer, balances, standard gram weight, lecture table galvanometer, optical disk with all accessories, lenses, photometer, air thermometer, and a full set of weather bureau apparatus, including barograph, thermograph, hygrometer, barometer, maximum and minimum thermometers, etc. These give a wide range to the experimental work that can be done.

### **Libraries**

Students of the School have available for their use the general library of the Association, which includes, for their exclusive use, a large collection of engineering texts, refer-



## *EQUIPMENT OF THE SCHOOL*

ence books, and current periodicals on engineering and scientific subjects.

In addition, all members of the School have the privilege of taking books from the Boston Public Library, which offers a very unusual opportunity to our non-resident students. The School is within easy access to the Public Library, which enables students to have unlimited reference to engineering subjects at any time.

### **Department of Physical Training**

Northeastern has exceptional facilities for all-round physical training. The gymnasium with its 12-lap running track, three basketball courts, wrestling, boxing, fencing and special exercise rooms, handball courts and bowling alleys, is one of the most complete in New England. The natatorium is one of the best in the country. It is in a separate building, having a glass roof, admitting abundant sunlight, and has a continuous supply of filtered salt water. The tank is 75 feet long and 25 feet wide. Adjoining the building is a large field equipped for athletics. Here are four tennis courts, outdoor gymnasium, basketball court, jumping pits and a track with a 100-yard straightaway; baseball and football fields. Interclass contests are arranged in basketball, baseball, tennis, indoor and outdoor athletics, and swimming. Intercollegiate games and meets are arranged with the leading colleges in the East.

## **ENGINEERING PRACTICE**

### **Correlation of Practical and Theoretical Work**

The employers who co-operate with us agree, where practicable, to employ the students in all the different departments of their establishments during their periods of engineering practice. This training is just as complete as the school work, and is just as thorough. Where possible, the course of the student is from the handling of the raw material to the shipment of the finished product. This practical training includes the use of the machines, as well as the executive duties of the plant, so that at the end of his course the graduate may not only know how to do things, but also why they are done in certain ways. Detailed reports are made by each student

## *SCHOOL OF ENGINEERING*

for each of his working periods. The subjects for these reports are chosen by the student and may be anything of importance in connection with his job. These reports are criticized and discussed when the student returns to school. Accurate records and grades are kept of the engineering practice of each student, and it is not possible to secure a degree unless this part of the course is completed successfully.

### **Number of Positions Available**

The number of positions at our disposal in any one branch of engineering is necessarily limited. Thus far we have secured desirable positions for our students as the growth of the School has demanded. Nevertheless, to be at all sure of work in his chosen branch of engineering, an applicant should file his application early.

Sometimes students may secure their own positions with firms, in which case an alternate can usually be furnished by the School, if desired. Such individual arrangements are entirely acceptable to the School, and may be made by any applicant, subject to the approval of the Director of Engineering Practice.

### **Attitude of Co-operating Firms**

The favorable attitude of the co-operating concerns toward our plan is shown by their retention of the same students from year to year, even after graduation, and also in the fact that whenever vacancies occur which can be filled by our men, the firms often apply for additional students to fill them. The men under whose supervision the students have been in their outside work are practically unanimous in approval of our plan, and speak highly of the enthusiasm, earnestness, and intelligence the students have shown in the performance of their duties.

### **Working Relations**

When a student is first assigned to a firm, the School gives him general information in regard to the work and a letter of introduction. At the first interview the student is expected to familiarize himself with the kind of work on which he is to be engaged while with the firm, and the conditions under which he is to work. It is expected that no student will

## ENGINEERING PRACTICE

accept employment through the school unless he can and will continue in School and with the firm in question throughout the year in accordance with the general plans of Engineering Practice. During the periods of Engineering Practice the students report for work at the regular working hours of the firm, no special privileges being granted. Students are not permitted to discontinue Engineering Practice except under unusual conditions and only by previous arrangements with the School. *In all cases of absences from Engineering Practice, whether unavoidable or not, the student or a member of his family is required to notify the employing firm by telephone immediately at or before the time of the occurrence of the absence.* This matter of notifying the employing firm immediately is very important. Failure to do so is sufficient cause for dismissal.

The School places the student at work with the employing firm and is responsible for his presence and conduct at work as well as the quality and scope of his work. All difficulties arising in regard to students who are in Engineering Practice are taken up with the School at the next following school period. *It is absolutely necessary that each student be prepared to fulfill his engineering practice obligations as faithfully during the summer months as at any other time,* and no student can ordinarily expect any longer vacation than the regular three weeks specified during the summer.

Students in the sophomore, junior, and senior years are almost invariably placed with firms which give them experience directly in line with the course of study followed at school.

Freshmen, as a rule, are assigned to work not so technical in character, but designed to train the younger men in the fundamental qualities of cheerfulness, dependability, enthusiasm, and grit. These attributes are essential to the successful completion of the upper class work. They are emphasized at every opportunity during the student's college life in connection with his engineering practice, and the first year's training is designed especially to develop these habits. If a young man can form habits of mental and physical alertness and reliability, he has laid a sure foundation for his success and happiness in after life. The detailed technical information and experience is added in the three upper years.

## SCHOOL OF ENGINEERING

In general, all changes and transfers in Engineering Practice are made at the beginning of the school year in September.

### Earnings

The firms treat our students as they do their other employees in manner of payment, rates of pay, chances for promotions, etc. Each firm makes individual arrangements with the student, and the School does not attempt to supervise except for occasional consultations with the employers over general policies.

*The rates of pay for students in the School are kept low so that the employer feels justified in devoting time to the instruction of the students and in transferring students from one department to another at approximately regular intervals.*

By agreement with the co-operating firms the following minimum wages are paid to students:

- \$10 per week for the first school year.
- 12 per week for the second school year.
- 14 per week for the third school year.
- 16 per week for the fourth school year.

Ordinarily a student starts with each firm at the minimum wage and is promoted as his ability may warrant. In certain cases the students receive less than the minimum stated above, but this is usually made up to them in some other way.

No upper limit of wages is set. The average maximum is \$18 to \$20 even for men of exceptional ability, because the students are given the privilege of attending school on the co-operative plan and of being transferred from one department to another. The sum earned is more than enough to pay the tuition and the necessary expenses of schooling, but does not cover the cost of living.

### Schedules of Practical Work

Below are typical schedules of practical work that have been prepared for our students by some of the companies which are giving them employment:

#### **Boston & Maine Railroad Co.**

ONE YEAR	Erecting Dept.
ONE YEAR	Machine Dept.
ONE YEAR	Machine Dept.
ONE YEAR	Erecting Dept.
	Drafting Room

## ENGINEERING PRACTICE

### Simplex Wire & Cable Co.

- ONE YEAR Insulating Dept.  
Braiding Dept.
- ONE YEAR Cable Shop  
Twisting Dept.
- ONE YEAR Machine Shop Construction Gang  
Electrical Construction Gang
- ONE YEAR Testing Room

### The Dennison Manufacturing Co.

- ONE YEAR Carpenter's Helper  
Pattern Maker's Helper and Case Making  
Mill-wright Work and Elevator, Fire Door Inspection  
Helper in Electrical Dept.
- ONE YEAR Machine Shop Stock Room  
Machine Shop  
Machine Shop  
Grinding Room
- ONE YEAR Power Plant Work  
Accident Prevention Work  
Filing Plans, Blue Prints, Tracing, Etc.  
Planning Dept. Work
- ONE YEAR Tracing and General Work  
Detailing and General Drafting

### Crofoot Gear Works

- ONE YEAR Inspection Dept.  
Finishing Dept.
- ONE YEAR Hobbing Dept.  
Cutting Dept.
- ONE YEAR General Grinding Dept.  
Tool Making

### Simplex Electric Heating Co.

- ONE YEAR Machine Dept.
- ONE YEAR Grinding Dept.  
Stock Dept.  
Winding Dept.  
Enameling Dept.  
Assembling Dept.
- ONE YEAR Testing Dept. First Division  
Testing Dept. Second Division
- ONE YEAR Shipping Dept.  
Drafting Dept.  
General Shop Experience

### Boston & Albany Railroad Co.

- ONE YEAR Work in Field Party
- ONE YEAR Work in Drafting Room
- ONE YEAR Masonry Inspection  
General Railroad Work  
Railroad Accounting
- ONE YEAR Railroad Accounting  
Timekeeping and Unit Costs

## SCHOOL OF ENGINEERING

### Condit Electrical Manufacturing Co.

ONE YEAR	Testing D. C. Apparatus
	Testing A. C. Apparatus
ONE YEAR	Switchboard
	Construction
	Installation
ONE YEAR	Blue Printing
	Drafting
ONE YEAR	Engineering
	Engineering Specifications

### Co-operating Firms

ABERTHAW CONSTRUCTION COMPANY, Boston (Civil)  
ACME APPARATUS COMPANY, Cambridge (Electrical)  
AMERICAN ACID COMPANY, Medford (Chemical)  
AMERICAN AGRICULTURAL CHEMICAL COMPANY, Everett (Chemical)  
AMERICAN GLUE COMPANY, Peabody (Electrical)  
AMERICAN RADIO & RESEARCH CORPORATION, Medford Hillside (Electrical)  
AMERICAN STEAM GAUGE & VALVE COMPANY, Boston (Mechanical)  
APPLETON, THOMAS A., Civil Engineer, Salem (Civil)  
ARLINGTON FOUNDRY, Arlington (Chemical and Mechanical)  
ARNOLD MACHINE SHOP, Rockland (Mechanical)  
ASPINWALL & LINCOLN, Civil Engineers, Boston (Civil)  
BARNES, ROWLAND H., Civil Engineer, Waltham (Civil)  
BATES, WALTER C., Surveyor, Jamaica Plain (Civil)  
BEACON OIL COMPANY, Everett (Chemical)  
BETHLEHEM SHIPBUILDING CORPORATION, Quincy (Civil, Mechanical, Electrical)  
BLANCHARD MACHINE COMPANY, Cambridge (Mechanical)  
BOSTON & ALBANY RAILROAD, Boston (Civil)  
BOSTON CONSOLIDATED GAS COMPANY, Boston (Chemical)  
BOSTON FUEL TESTING COMPANY, Boston (Chemical)  
BOSTON INDIA RUBBER COMPANY, Boston (Chemical)  
BOSTON & MAINE RAILROAD, Boston (Mechanical and Civil)  
BOSTON UNIVERSITY-LABORATORY, Boston (Chemical)  
BOSTON VARNISH COMPANY, East Everett (Chemical)  
BOSTON WOVEN HOSE & RUBBER COMPANY, Cambridge (Mechanical, Chemical, Administrative)  
BRACKETT, L. G., Civil Engineer, Boston (Civil)  
BROADWAY IRON FOUNDRY, Cambridge (Mechanical)  
BUFF & BUFF MANUFACTURING COMPANY, Jamaica Plain (Civil, Mechanical)  
BUTT, H. G., MANUFACTURING COMPANY, Boston (Mechanical)  
CADILLAC AUTOMOBILE COMPANY, Boston (Mechanical)  
CAMBRIDGE RUBBER COMPANY, Cambridge (Electrical)  
CHASE-SHAWMUT COMPANY, Newburyport (Electrical)  
COFFIN VALVE COMPANY, Neponset (Mechanical)  
CONANT MACHINE COMPANY, Concord (Mechanical)  
CONDIT ELECTRICAL MANUFACTURING COMPANY, South Boston (Electrical)  
CRITTENDEN MANUFACTURING COMPANY, Jamaica Plain (Mechanical)  
CROCKER, H. S., City Engineer, Brockton (Civil)  
CROCKER PEN COMPANY, Everett (Mechanical)

## Students in Class Work



Class in Physics Laboratory  
NORTHEASTERN COLLEGE

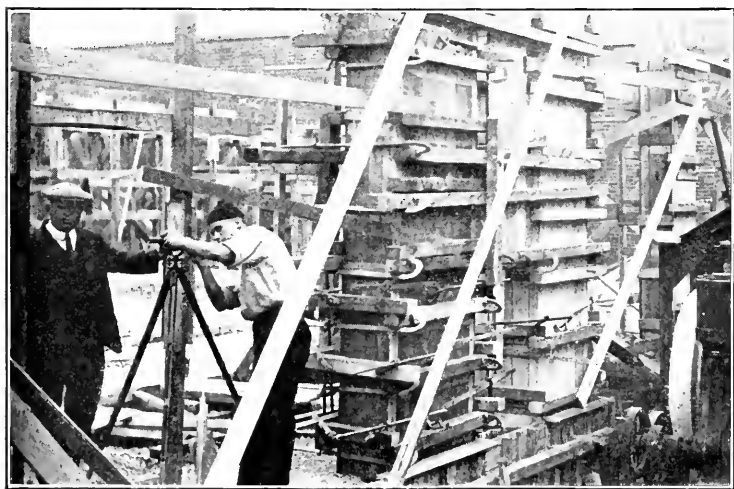


Class in Organic Chemistry  
NORTHEASTERN COLLEGE

# Civil Engineering Students



Making a Plane Table Survey  
CLASS IN SURVEYING FIELDWORK



Levelling for Building Construction  
SIMPSON BROS. CORPORATION



## ENGINEERING PRACTICE

CROFOOT GEAR WORKS, Hyde Park (Mechanical)  
CROSBY STEAM GAGE & VALVE COMPANY, Charlestown (Mechanical)  
DENNISON MANUFACTURING COMPANY, Framingham (Mechanical and Electrical)  
DRISCOLL & COMPANY, Heating Contractors, Salem (Mechanical)  
EASTERN METAL & REFINING COMPANY, Malden (Mechanical)  
EASTMAN AND BRADFORD, Civil Engineers, Lynn (Civil)  
EDISON ELECTRIC ILLUMINATING COMPANY, Boston (Mechanical, Electrical, Chemical)  
ELECTRIC MAINTENANCE COMPANY, Boston (Electrical)  
ELLIOT, C. J., Civil Engineer, Boston (Civil)  
ELLIS MANUFACTURING COMPANY, Milldale, Conn. (Mechanical)  
EMERSON APPARATUS COMPANY, Melrose (Mechanical)  
EVANS, R., Essex County Engineer, Salem (Civil)  
FARNHAM, RALPH J., Civil Engineer, Wellesley (Civil)  
FULLER, GEORGE A., COMPANY, Boston (Civil)  
GANNETT, CHARLES H., Civil Engineer, Boston (Civil)  
GENERAL ELECTRIC COMPANY, Lynn (Mechanical, Electrical and Chemical)  
GLENLYON DYE WORKS, Saylesville, R. I. (Chemical)  
HOLTZER CABOT ELECTRIC COMPANY, Roxbury (Electrical)  
HOOD RUBBER COMPANY, Watertown (Mechanical)  
HOWE & FRENCH, Boston (Chemical)  
HUME BODY CORPORATION, Boston (Mechanical)  
HUMPHREY, C. B., Court Surveyor, Boston (Civil)  
HUNT-SPILLER MANUFACTURING COMPANY, South Boston (Chemical)  
HYGRADE LAMP COMPANY, Salem (Electrical)  
INDUSTRIAL ENGINEERING CORPORATION, Boston (Chemical)  
JAGER, CHARLES J., COMPANY, Boston (Mechanical)  
JENNEY ELECTRICAL MANUFACTURING COMPANY, Brockton (Electrical)  
JOY, C. F., JR., Town Engineer, Milton (Civil)  
KINNEY MANUFACTURING COMPANY, Jamaica Plain (Mechanical)  
KNOTT, L. E., APPARATUS COMPANY, Cambridge (Mechanical and Chemical)  
LANDERS, FRARY & CLARKE, New Britain, Conn. (Mechanical)  
LAWTON MILLS CORPORATION, Plainfield, Conn. (Mechanical)  
LEVER BROTHERS, Soap Manufacturers, Cambridge (Chemical)  
LEWIS, GREEN, McADAMS AND KNOWLAND, Cambridge (Chemical)  
LYNN, CITY OF, Water Dept. (Civil)  
MAINE STATE HIGHWAYS, Augusta, Maine (Civil)  
MALDEN & MELROSE GAS & ELECTRIC COMPANY, Malden (Electrical and Chemical)  
MANHASSETT MANUFACTURING COMPANY, Putnam, Conn. (Electrical)  
MASSACHUSETTS INSTITUTE OF TECHNOLOGY, Cambridge (Chemical)  
MASSACHUSETTS PUBLIC WORKS DEPT., Division of Highways, Boston (Civil)  
MASSACHUSETTS PUBLIC WORKS DEPT., Testing Laboratory, Boston (Chemical)  
McCLINTOCK & WOODFALL, Civil Engineers, Boston (Civil)  
McELWAIN, W. H., COMPANY, Manchester, N. H. (Mechanical)  
McINTIRE, F. N., BRASS WORKS, Boston (Mechanical)  
MERCHANT, A. P., COMPANY, Boston (Electrical)  
MERRIMAC CHEMICAL COMPANY, North Woburn (Chemical)  
METAL GOODS MANUFACTURING COMPANY, INC., Boston (Mechanical and Electrical)

## SCHOOL OF ENGINEERING

MONKS AND JOHNSON, Structural Engineers, Boston (Civil)  
MORGAN CONSTRUCTION COMPANY, Worcester (Mechanical)  
MOSS ELECTRICAL COMPANY, Putnam, Conn. (Electrical)  
NEW ENGLAND COAL & COKE COMPANY, Everett (Chemical)  
NEW ENGLAND OIL REFINING COMPANY, Fall River, Mass. (Civil)  
NEW ENGLAND STRUCTURAL COMPANY, Everett (Mechanical)  
NEWTON CITY ENGINEER (Civil)  
NORFOLK IRON WORKS, Quincy (Civil)  
NORTHEASTERN COLLEGE LABORATORIES (Civil, Mechanical, Electrical and Chemical)  
NORWOOD TOWN ENGINEER (Civil)  
OLD COLONY FOUNDRY, East Bridgewater (Mechanical)  
OLD COLONY TOOL COMPANY, Taunton (Mechanical)  
PAYER'S MACHINE SHOP, Franklin (Mechanical)  
PLYMOUTH CORDAGE COMPANY, Plymouth (Mechanical)  
PLYMOUTH ELECTRIC LIGHT COMPANY, Plymouth (Electrical)  
PLYMOUTH TOWN ENGINEER (Civil)  
PNEUMATIC SCALE CORPORATION, Norfolk Downs (Mechanical)  
POTTER, HERBERT S., Electrical Contractor, Boston (Electrical)  
PORTLAND, MAINE, Department of Public Works (Civil)  
PUNCHARD, W. H., Landscape Architect, Boston (Civil)  
PUTNAM MACHINE COMPANY, Fitchburg (Mechanical)  
SANBORN COMPANY, Instrument Manufacturers, Boston (Mechanical and Electrical)  
SHERRY, FRANK E., Civil Engineer, Boston (Civil)  
SIMPLEX ELECTRIC HEATING COMPANY, Cambridge (Electrical)  
SIMPLEX WIRE AND CABLE COMPANY, Cambridge (Electrical)  
SIMPSON BROTHERS CORPORATION, Boston (Civil)  
SKINNER ORGAN COMPANY, Dorchester (Civil)  
SKINNER, SHERMAN & ESSELEN, INC., Boston (Chemical)  
STARRET, L. S., TOOL COMPANY, Athol (Mechanical)  
STEVENS DURYEA COMPANY, Chicopee Falls (Mechanical and Electrical)  
STURTEVANT, B. F., COMPANY, Hyde Park (Mechanical and Electrical)  
TRIMONT MANUFACTURING COMPANY, Roxbury (Mechanical)  
TRUFANT, A. P., Civil Engineer, Brockton (Civil)  
TURNER CONSTRUCTION COMPANY, Boston (Civil)  
UNION SPINNING & PLATING COMPANY, Boston (Mechanical)  
UNITED ELECTRIC RAILWAYS COMPANY, Providence, R. I. (Mechanical and Electrical)  
UNITED SHOE MACHINERY COMPANY, Beverly (Mechanical and Electrical)  
UNITED STATES ENVELOPE COMPANY, Holyoke (Mechanical)  
VENNARD, WILLIAM L., City Engineer, Lynn (Civil)  
VICTOR SHOE MACHINERY COMPANY, Lynn (Mechanical)  
WALTHAM MOTOR MANUFACTURERS, INC., Waltham (Mechanical)  
WALTHAM WATCH COMPANY, Waltham (Mechanical and Chemical)  
WARREN BROTHERS COMPANY, Paving Materials Laboratory, Cambridge (Chemical)  
WERBY LABORATORIES, Boston (Chemical)  
WESTINGHOUSE ELECTRIC MANUFACTURING COMPANY, Springfield (Electrical)  
WHITMAN AND HOWARD, Civil Engineers, Boston (Civil)  
WILLARD SERVICE STATION, South Framingham (Electrical)  
WOLLASTON FOUNDRY COMPANY, Norfolk Downs (Mechanical)  
WORCESTER ELECTRIC LIGHT COMPANY, Worcester (Mechanical and Electrical)

## REQUIREMENTS FOR ADMISSION

### General Statement

In general, the preparation necessary to enable an applicant to pursue successfully one of the regular curriculums in the School corresponds to the four-year course of study offered by high schools of the better grade. The requirements of age and scholarship are regarded as the minimum in all ordinary cases, and only exceptional circumstances will justify any relaxation. Parents and guardians are advised that it is generally for the ultimate advantage of the student not to enter under the age of sixteen years. Every applicant must furnish references as to his character and ability, and must show cause why he may reasonably be expected to make a success of his course, both in the School and in Engineering Practice. He must be willing and able to work hard, both mentally and physically.

### Admission to the First Year

Students are admitted to the first year in all curriculums at the opening of the first semester in September and at opening of the second semester in January. An applicant for admission as a regular student to the School is required to present evidence of graduation from an accredited four-year high school, or the equivalent, and to have included in his course of study algebra as far as quadratics and plane geometry. The completion of fifteen units of preparatory subjects satisfactory to the Committee on Admission is considered equivalent qualification. Students whose high school courses have not included the required algebra and plane geometry must take special entrance examinations, the dates of which are scheduled elsewhere in this catalog. Certificates of entrance examinations passed for admission to colleges, or technical schools of good standing, may be accepted in lieu of entrance examinations.

In exceptional cases a student who is not a high school graduate may be allowed to enter as a special student, but only after his case has been passed on favorably by the Committee on Admission. Every applicant is urged to remain in high school until he is graduated, even though he might be able to qualify for entrance before receiving his high school diploma.

## *SCHOOL OF ENGINEERING*

A student obtaining a low rating on his entrance examinations, or who may not be eligible to assignment to Engineering Practice for other reasons, may by special permission be allowed to attend school either every period or every alternate period. When a student's record justifies such a procedure, he may be assigned to Engineering Practice.

### **Application for Admission**

Each applicant for admission to the School is required to fill out an application blank, whereon he states his previous education, as well as the names of persons to whom reference may be made in regard to his character and previous training.

An application fee of five dollars (\$5) is required when the application is filed. This fee is non-returnable if the applicant is accepted. If he is rejected, one-half the fee will be returned upon request.

The last page of this catalog is in the form of an application blank. It should be filled out in ink and forwarded with the required five dollar fee to Carl S. Ell, Dean, 316 Huntington Avenue, Boston, Mass.

Upon receipt of the application, properly filled out, the School at once looks up the applicant's references and high school records. When replies have been received to the various inquiries instituted, the applicant is at once advised as to his eligibility for admission to the School. All applicants must meet the Dean for a personal interview before being finally accepted by the School. This interview may be postponed if desired until the opening of School in the fall.

### **First Tuition Payment**

Should a student wish to be assigned to a position with a co-operating firm before the regular opening of School, he is required to fill out a registration card and also an application for membership in the Boston Y. M. C. A. The first payment of tuition must be paid before he will be assigned to any position at Engineering Practice.

Before any student shall be allowed to attend classes, he shall have made the first tuition payment. This is in addition to the application fee of five dollars (\$5) and the Student Activities fee of fifteen dollars (\$15), and may be paid at any time before school opens.

## REQUIREMENTS FOR ADMISSION

### **Birth and Educational Certificates**

The law in regard to the hours and conditions of labor by minors makes it necessary that all students under twenty-one years of age shall obtain Educational Certificates before they can be accepted by co-operating firms. For those students who live outside of Boston, it will save time and trouble if they bring a Certificate of Birth, or an Educational Certificate, with them on coming to Boston. The Educational Certificates are obtained free, upon request, from the Superintendent of Schools in the city or town where the student lives, if he lives in Massachusetts. For students living in other states a Certificate of Birth, or its equivalent, is all that will be necessary.

### **Subjects for Examination**

Applicants who have not passed algebra to quadratics and plane geometry satisfactorily in their courses of study in high school are required to pass entrance examinations in these subjects.

By writing the School, prospective applicants may receive copies of former entrance examinations. These copies are available for distribution and may be obtained at any time.

The detailed requirements in these subjects are as follows:

#### **Algebra**

The four fundamental operations for rational algebraic expressions; factoring, determination of highest common factor and lowest common multiple by factoring; fractions, including complex fractions; linear equations, both numerical and literal, containing one, or more, unknown quantities; problems depending on linear equations; radicals, including the extraction of the square root of polynomials and numbers; exponents, including the fractional and negative.

#### **Plane Geometry**

The usual theorems and construction of good text-books, including the general properties of plane rectilinear figures; the circle and the measurement of angles; similar polygons; areas, regular polygons and the measurement of the circle.

## *SCHOOL OF ENGINEERING*

The solution of numerous original exercises, including loci problems. Applications to the mensuration of lines and plane surfaces.

### **Entrance Examinations in Boston**

Examinations for admission to the first year class will be held at 316 Huntington Avenue in January, June and September of each year.

Students are advised to attend the January or June examinations, if possible, in order that any deficiencies then existing may be made up in September.

The time of examinations is as follows:

10:00 a. m. to 12:00 m., Algebra;

1:00 p. m. to 3:00 p. m., Plane Geometry.

During the current year the examinations will be given on the following days: January 19, 1922; June 15, 1922; Sept. 7, 1922.

No fees are to be paid at the time of the examination.

### **Preparatory Schools**

There are day and evening preparatory schools conducted by Northeastern. Students having entrance conditions, or requiring further preparation for the entrance examinations, may avail themselves of this opportunity to cover the desired work.

### **Provisional Acceptance**

When, for any reason it is deemed advisable, the School reserves the right to place any entering student upon a period of probation, extending from one to three months, before placing him at practical work. Whether he shall be placed at work at the end of this time or not will be determined by the character of the work that he has accomplished during this probationary period.

## SCHOOL INFORMATION IN DETAIL

### Location

The School is housed in the buildings of the Association, and in addition occupies the entire third floor of the Gainsborough Building, directly opposite.

The buildings are located on Huntington Avenue, just beyond Massachusetts Avenue, and are within easy access to the various railroad stations, and the business and residential sections. A map is shown on the following page.

### Residence

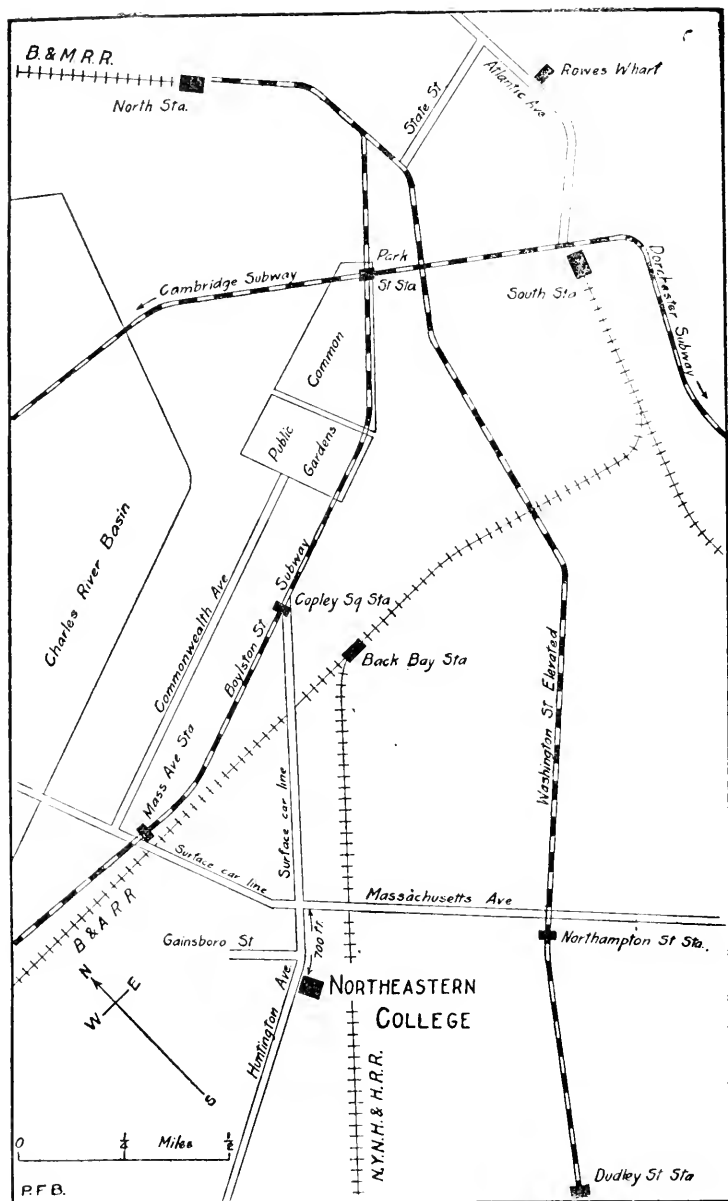
It has been found to be much more satisfactory for the student to live within easy access of Boston, especially during periods in school, than to live out twenty-five or thirty miles. The saving of time and effort more than offset any increased expense.

There are limited accommodations at very moderate rates in the dormitories. These rooms may be had separately or in groups with a common reception room. The price varies from \$2.25 per week upwards. Since board costs about \$8.00 per week, a student may obtain room and board for from \$10.25 per week upwards.

Residence in Boston, though not required, is advisable as it gives the student opportunity to use the college facilities outside of class hours, and to confer easily with his instructors about his college work. It also gives him a wider range in the choice of a co-operating position, since he can readily report for early work if necessary, which is often impossible if the student lives at a distance from Boston. Moreover, residence in Boston gives the student close connection with the activities of college life.

The School officials have no jurisdiction in the matter of dormitory assignments. Students should write the House Secretary of the Boston Y. M. C. A. for rooms in the dormitories.

The Department of Student Activities maintains a registry of suitable rooms in the nearby houses for the convenience of students desiring accommodations outside of the dormitories.





## DETAILED INFORMATION

### School Year

The school year for all students is of forty-nine weeks' duration, divided into twenty-three weeks of school work and twenty-six weeks of engineering practice. Thus each student has three weeks of vacation each year. The school work is divided into three terms—the First Semester of ten weeks, the Second Semester of ten weeks, and the Summer Term of three weeks.

The First Semester for Division A begins each year on the second Monday in September, and this constitutes the beginning of the school year for all students. The second Summer Term follows the vacation period and closes the official school year.

### Attendance

Students are expected to attend all exercises in the subjects they are studying, unless excused by the Registrar. Exercises are held, and students are in general expected to devote themselves to the work of the School, between 9:00 a.m. and 5:00 p.m., with a one-hour lunch period, on every week day except Saturday. Saturday classes are held only between 9:00 a. m. and 1:00 p.m.

### Four-Year Curriculums

The School offers four-year college curriculums of study, in co-operation with engineering firms, in the following branches of engineering, leading to the Bachelor's degree:

1. Civil Engineering.
2. Mechanical Engineering.
3. Electrical Engineering.
4. Chemical Engineering.
5. Administrative Engineering.

Descriptions of the curriculums and schedules showing the subjects of instruction included will be found on succeeding pages.

### Tuition Fees

The tuition fee in each curriculum is one hundred and seventy-five dollars (\$175) a year for each of the four years.

## SCHOOL OF ENGINEERING

The tuition for freshmen is payable as follows:

### *Division A*

<i>School Periods</i>	<i>Tuition Due</i>
Sept. 11, 1922, to Jan. 27, 1923	\$60 Sept. 11, 1922
and	\$50 Nov. 20, 1922
Aug. 20, 1923, to Sept. 8, 1923	\$50 Jan. 22, 1923
	\$15 Aug. 20, 1923

### *Division B*

<i>School Periods</i>	<i>Tuition Due</i>
Jan. 29, 1923, to June 15, 1923	\$60 Jan. 29, 1923
and	\$50 April 9, 1923
June 18, 1923, to July 7, 1923	\$50 June 11, 1923
	\$15 July 2, 1923

The tuition for upperclassmen is payable as follows: sixty dollars (\$60) at the beginning of the first school period; fifty dollars (\$50) at the beginning of the second school period; fifty dollars (\$50) at the beginning of the third school period, and fifteen dollars (\$15) at the beginning of the summer term.

All students who were in attendance at the School June 1, 1920, will be permitted to complete their courses of study at the same rate of tuition as was charged when they first registered in the school. The tuition fee for all such students in the four-year curriculums is payable as follows: sixty dollars (\$60) at the beginning of the first school period; thirty-five dollars (\$35) at the beginning of the second school period; thirty dollars (\$30) at the beginning of the third school period.

### **Full-Time Students**

Students attending school in both division A and B during the first and second semesters are charged a minimum additional tuition fee of twenty-five dollars (\$25) a semester in addition to the regular yearly rate. Such students who are registered for more than sixteen hours of school work a semester, over and above the amount of work prescribed in the catalog for the year in which they are enrolled, are charged one dollar and fifty cents (\$1.50) an hour per semester for each hour above sixteen. In computing additional hours, the catalog schedules are used and both hours of exercises and hours of preparation are counted. Students not on a

## DETAILED INFORMATION

full-time basis, but taking extra work, will be charged at the rate of one dollar and fifty cents (\$1.50) an hour per semester for all work in excess of the regular schedule.

Students who attend both summer terms in any one summer are charged an additional tuition fee of twenty-five dollars (\$25) for the second summer term. The tuition for special students in the summer terms is twenty-five dollars (\$25) a term.

Failure to make the required payments on time renders the student liable to be barred from his classes or suspended from Engineering Practice until the matter has been adjusted with the Bursar.

The yearly tuition fee includes the \$5.00 membership in the Boston Y. M. C. A. This fee is not included in the tuition for special summer term students.

### Laboratory Fees and Deposits

#### CHEMICAL LABORATORY

All students taking chemical laboratory work are required to make a deposit of five dollars (\$5) at the beginning of each year, from which deductions are made for breakage and destruction of apparatus in the laboratory. Any unused portion of this deposit is returned to the student at the end of the school year. In case the charge for such breakage or destruction of apparatus is more than five dollars (\$5), the student is charged the additional amount.

Students enrolled in the curriculums in Chemical Engineering will be charged a laboratory fee in accordance with the following rates:

<i>Course</i>	<i>Fee</i>
41-2 Inorganic Chemical Laboratory .....	\$5.00
42-2 Qualitative Analysis Laboratory .....	10.00
43-2 and 44-2 Quantitative and Technical Analysis combined ..	5.00
45-2 Organic Chemical Laboratory .....	10.00
45-4 Organic Chemical Laboratory .....	5.00
47-2 Industrial Chemical Laboratory .....	5.00

#### ELECTRICAL LABORATORY

Students taking electrical laboratory work will be charged a laboratory fee in accordance with the following rates:

## SCHOOL OF ENGINEERING

<i>Course</i>	<i>Fee</i>
30-4 Applied Electricity Laboratory .....	\$5.00
32-4 Electrical Engineering II Laboratory .....	5.00
32-6 Electrical Engineering III Laboratory .....	5.00
32-8 Electrical Engineering IV Laboratory .....	10.00
32-2 Electrical Measurements Laboratory .....	5.00

### PHYSICS LABORATORY

Students taking courses in the physics laboratory will be charged a laboratory fee of \$2.00 per year.

### ENGINEERING LABORATORY

Students taking courses in engineering laboratory will be required to pay a laboratory fee of \$2.00 per year.

### TESTING MATERIALS LABORATORY

Students enrolled in the course in testing materials laboratory are charged a laboratory fee of \$2.00 per year.

## Student Activities Fee

Each student in the School is charged a Student Activities Fee of fifteen dollars (\$15). Ten dollars of this fee is payable at the time of registration and is non-returnable, five dollars is payable with the third payment of tuition. This fee supports certain student activities, and includes membership in the *Northeastern Engineering Athletic Association*, subscription to the *Northeastern Tech*, the school paper, and subscription to the *Cauldron*, the college year book. The services of a physician are also available under this fee. Only minor ailments, however, are treated. Should the student show signs of more serious illness, he is immediately advised to consult a specialist or return to his home, where he can get more adequate treatment.

## Payments

All payments should be made to Galen D. Light, Bursar.

All checks should be made payable to The Bursar, Northeastern College.

## Refunds

As the College assumes the obligation of carrying the student throughout the year when the student registers, and as

## DETAILED INFORMATION

the College provides the instruction and accommodations on a yearly basis, the Committee on Refunds has ruled as follows:

- A. Applications for refunds must be presented within sixty days after withdrawal from school.
- B. Credits or refunds may be granted only as stated below:
  - 1. If the reasons as set forth in the application meet with the approval of the Committee on Refunds, the unused portion of the tuition paid by the applicant may be placed in suspense and used at some future time by the applicant to apply upon tuition in any school in Northeastern College, provided it is used within two years.
  - 2. Cash refunds may be granted only in cases where students are compelled to withdraw on account of personal illness. The application must be accompanied by a satisfactory certificate from a physician.

### **Books and Supplies**

All supplies may be purchased at the College Book Store at a cost of twenty dollars (\$20) to twenty-five dollars (\$25) a year. The supplies for the freshman year cost somewhat more than this because a set of drawing instruments must be obtained. The earnings of the students for their services with the co-operating firms considerably exceed the cost of tuition, fees, the cost of books and supplies, and incidental expenses. The purchase of supplies is therefore not a burden to the student.

### **Elective Subjects**

Students electing any course not included in their curriculum will be required to take all examinations in that course and to attain a passing grade in it before they will be eligible for a degree.

### **Status of Students**

The ability of students to continue their courses is determined by means of daily work and examinations, but regularity of attendance and faithfulness to daily duties are considered equally essential.

When a student elects a curriculum, he is required to

## *SCHOOL OF ENGINEERING*

complete all courses included therein in order to be graduated. No subject is to be dropped, or omitted, without the consent of the Committee on Scholarship and the approval of the Dean.

Any student failing to make a satisfactory record, either in school or practical work, may be removed from his position in practical work, or from the School.

Students transferring from approved colleges will be admitted to advanced standing provided that their record warrants such a procedure. Whenever a student enters with advanced standing and it is found that he shows inadequate preparation in any of his pre-requisite subjects, the faculty reserves the right to require the student to repeat in class the subjects in question.

A special student is permitted to attend the School, subject to the approval of the faculty, and to take such courses as the School offers. Special students are not eligible for a degree.

### **Examinations**

Examinations covering the work of the term are usually held at the close of each term. Exceptions may be made in certain courses where, in the opinion of the instructor, examinations are not necessary.

Condition examinations for all courses are given during the week immediately following the last week of the Summer Term for Division A, and during the week preceding the Summer Term for Division B. Condition examinations are not given for courses in which no final examination was given. Special examinations can be arranged for only by vote of the Committee on Scholarship, and for all such examinations the college requires the payment of a special fee of five dollars (\$5).

### **Probation**

Students are placed on probation either by the Executive Committee or the Committee on Scholarship. Failure to show proper respect for constituted authority; infringement of the rules and regulations of the college; disregard of obligations to a co-operative firm, etc., constitute insubordination. All matters of insubordination are handled by

## DETAILED INFORMATION

the Executive Committee and the penalty for such may be probation.

Failure to meet the standards set by the Committee on Scholarship, unless the failure is supported by causes wholly beyond the student's control, will necessitate the committee placing the student on probation.

Removal from probation is in the hands of the committee placing the student thereon.

### **Rules of Standing in Scholarship**

A student's grade is officially recorded by letters and percentages, as follows:

A, excellent, 90-100 per cent.

B, good, 80-89 per cent.

C, fair, 70-79 per cent.

D, passable, 60-69 per cent.

E, work incomplete or unsatisfactory, 40-59 per cent.

F, complete failure, below 40 per cent.

A mark of E in any particular subject entitles the student to make up the unsatisfactory work, or to take a condition examination. This letter is given for all grades below 60 per cent on intermediate reports.

A mark of F denies the privilege of taking a condition examination, and the course must be repeated.

A student who does not remove a condition before that course is repeated a year later must take the course over again. A condition in more than one subject involves the loss of the privilege of being a candidate for graduation with the student's class, and may involve the loss of assignment to Engineering Practice.

The responsibility for the removal of a condition rests with the student, who is required to ascertain when and how the condition can be removed.

No student may qualify as a candidate for a degree in any given year unless clear in all the required subjects of the lower years of his chosen curriculum. He must also be in good standing in all courses for which he is enrolled.

Entrance requirements or preparatory subjects pursued in the School are considered as required school work.

## *SCHOOL OF ENGINEERING*

### **Absences**

No "cuts" are allowed, and a careful record of attendance upon exercises is kept for each student. Absence from exercises regularly scheduled in any subject will seriously affect the standing of a student, and may cause the removal of the subjects from which he is absent from his schedule and the listing of these subjects as conditioned subjects. In case he presents a reasonable excuse for the absence, however, he may be allowed to make up the time lost and be given credit for the work; but he must complete the work at such time and in such manner as his instructor in the course, with the approval of the head of his department, shall designate. Laboratory work lost can be made up only when it is possible to arrange for the necessary time during hours when these departments are open for regularly scheduled instruction. Absences from exercises immediately preceding or following a recess are especially serious and entail severe penalizing.

Attendance at all mass meetings of the student body is compulsory. Exceptions to this rule are made only when the student has received permission from the Registrar, previous to the meeting from which he desires to be absent.

### **Reports of Standing**

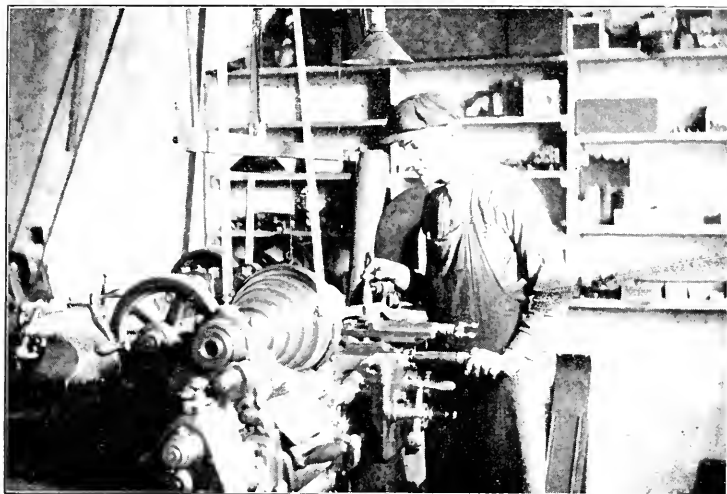
Reports of standing of all students are issued four times a year, which will be at the end of each five-week school period. In addition to these regular periods, a special report on the subjects taken during the summer term will be issued immediately at the close of the summer term. All questions relative to marks are to be discussed with the student's faculty advisor, who, in turn, will make all necessary recommendations to the Committee on Scholarship, through the head of his department.

Every effort is made to keep the student up in his studies. Parents and students are always welcomed by the Dean and advisors for conference upon such matters. Special reports on a student's work will be sent to parents at any time, upon request.

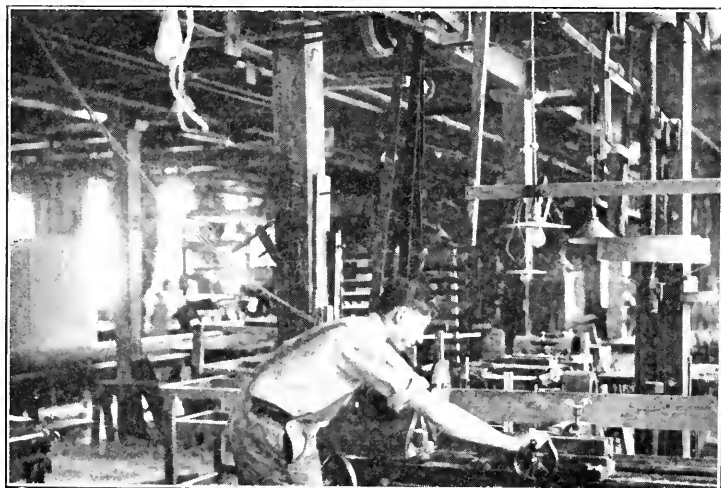
Parents or guardians will be notified in all cases when students are advised, or required, to withdraw from the School.



# Mechanical Engineering Students

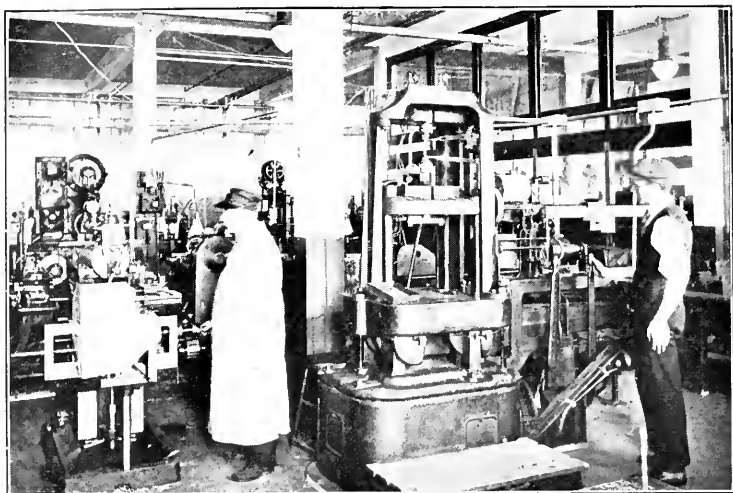


Operating a Lathe  
H. G. BUTT MFG. COMPANY

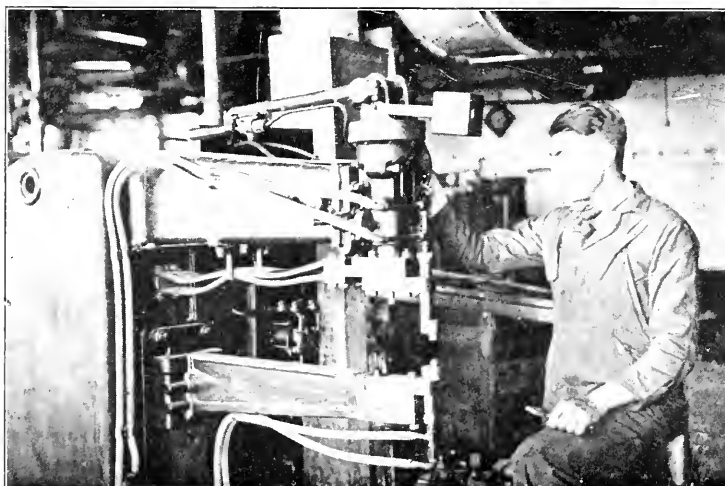


Wood Turning  
DENNISON MFG. CO., FRAMINGHAM

## Electrical Engineering Students



Making Tensile Tests on Steel  
GENERAL ELECTRIC COMPANY, LYNN



Operating a Spot Welder  
UNITED SHOE MACHINERY COMPANY, BEVERLY

## DETAILED INFORMATION

### Conduct

It is assumed that students come to the School for a serious purpose, and that they will cheerfully conform to such regulations as may from time to time be made. In case of injury to any building, or to any of the furniture, apparatus, or other property of the School, the damage will be charged to the student, or students, known to be immediately concerned; but if the persons who caused the damage are unknown, the cost for repairs may be assessed equally upon all the students of the School.

Students are expected to behave with decorum, to obey the regulations of the School, and to pay due respect to its officers. Conduct inconsistent with the general good order of the School, or persistent neglect of work, if repeated after admonition, may be followed by dismissal, or, in case the offense be a less serious one, the student may be placed upon probation. The student so placed upon probation may be dismissed if guilty of any further offense.

It is desired to administer the discipline of the School so as to maintain a high standard of integrity and a scrupulous regard for truth. The attempt of any student to present, as his own, any work which he has not performed, or to pass any examination by improper means, is regarded as a most serious offense, and renders the offender liable to immediate expulsion. The aiding and abetting of a student in any dishonesty is also held to be a grave breach of discipline.

### Advisors

Upon entering the School each student is assigned to a faculty member as his Advisor, who takes an active interest in the student's welfare from all points, and not only guides and assists him in the satisfactory pursuit of his studies, but keeps a close watch on all matters which might tend to hamper the student in his College life, and sees that such hampering does not occur so far as possible.

In the upper years the function of the Advisor is somewhat different and tends more toward consultation and suggestions bearing on the student's plans and probable work after graduation.

## SCHOOL OF ENGINEERING

### STUDENT ACTIVITIES

A moderate participation in social and athletic activities is encouraged by the Faculty, although a standard of scholarship which is incompatible with excessive devotion to such pursuits is required of the students.

#### Student Activities Committee

The student body has organized a number of groups, or clubs, all of which come under the jurisdiction of the Student Activities Committee. This committee consists of students elected from the various classes, and has general supervision over all social functions of the School. The committee has opened a Student Activities Room, a club room for all members of the School, in which current periodicals, magazines, and engineering books of interest to the young engineer are available for the student's use during his leisure moments. The committee has also formed the Musical Clubs, which consist of an orchestra, a band, a banjo and mandolin club, and a glee club. In order to provide for the social intercourse of the students, as well as to enable the men in the different divisions to meet one another, socials and entertainments are held for their exclusive enjoyment.

#### The Northeastern Engineering Athletic Association

The Athletic Association consists of all members of the School. At the head of the association is a General Athletic Committee, consisting of the Faculty Committee on Athletics and members elected from the student body. This committee has complete charge of all athletics. Under the guidance of efficient athletic coaches, track, basketball, swimming, and baseball teams are formed and schedules are arranged with other colleges for home games and games abroad. The association also encourages wrestling, interclass baseball and football, and tennis teams. Interclass and interdivision meets are held, as well as a field day near the close of the college year.

#### The "Northeastern Tech."

The students issue a weekly paper called the *Northeastern Tech.* Here the students have an opportunity to express

## DETAILED INFORMATION

their opinions on subjects relating to study, engineering practice, social events, or topics of the day. In addition, pertinent articles by prominent men, as well as college notes and information, make this feature of student activities very valuable. Positions on the editorial staff of the paper are attained by competitive work.

### **Professional Society**

The students in the various courses are organized as a professional society known as the Northeastern College Engineering Society for the closer association of the students of the school, and for the discussion and consideration of various problems and new knowledge in the Engineering Field. Meetings are held every few weeks, at which the members are addressed by engineers and other men of prominence.

There are four sections of the society, the Civil Engineering Section, the Mechanical Engineering Section, the Electrical Engineering Section, and the Chemical Engineering Section. These sections are affiliated either by individual membership or as sections with the Boston Society of Civil Engineers, the American Chemical Society, or the American Institute of Electrical Engineers, thereby procuring for the individual that most valuable association with the successful practicing engineers of the community, and the various problems discussed by them.

### **“The Cauldron”**

“The Cauldron” is the year book of the School. The Senior Class is responsible for its publication, and the members of the staff are chosen through competitive work. The book is ready for distribution in the latter part of the second semester. It contains the usual review of the year’s work and activities, a complete history of all classes in the School, all their functions, socials, etc. It also contains a complete individual history of the entire graduating class and is a souvenir highly prized in later years by all graduates.

### **Student Activities Fund Committee**

In order to finance the foregoing student activities, this Student Activities Fund Committee has been formed, and

## SCHOOL OF ENGINEERING

consists of elected representatives from the Student Activities Committee, the Northeastern Engineering A. A., and the *Northeastern Tech.* This committee apportions the Student Activities Fee among the various activities. Thus the Musical Clubs, the Student Activities Room, the athletic teams, and the college paper are supported by proper apportionment of the fifteen-dollar fee paid by each student at the beginning of the college year.

### Student Council

This is the student governing body, and comprises the leaders of the various classes, organizations, clubs, and teams. It acts as a supreme student governing body. It has jurisdiction, under proper supervision of the Faculty, over all student matters, as customs, privileges, or such other matters which can properly be decided upon by such a body.

### The Pan-Hellenic Council

A representative from each fraternity, as well as an elected non-fraternity man from each division, make up the Pan-Hellenic Council. It has preliminary jurisdiction over laws governing the regulation of fraternities and clubs in the College.

### Annual Prizes

Prizes are awarded annually at the School of Engineering for excellence in the various departments of school activities. It is the aim of the college that such prizes should stimulate the interest of the student to attain a high proficiency in some branch of undergraduate endeavor. The prizes are as follows:

**Public Speaking.**—Cash prizes of fifty, twenty-five, and ten dollars respectively are offered yearly for excellence in the presentation of original speeches before the college at a regular student mass meeting. All students are eligible to compete for these prizes. The regulations for the contests are published in the *Northeastern Tech* early in the year.

**Engineering Conference.**—The Department of Engineering Practice annually awards a silver loving cup to the man in each of the professional sections who delivers the

## DETAILED INFORMATION

best talk before a regular Conference meeting upon an engineering topic during the year. All regular students, with the exception of freshmen, may compete for these cups.

**Thesis.**—To the senior who presents the best thesis for graduation a gold medal is awarded at the end of the college year. As each senior is required to submit a thesis before receiving a degree, the purpose of the prize is not to stimulate interest in this important part of a senior's curriculum, but to afford recognition to the man who has done unusually excellent work in meeting the thesis requirements.

**Athletics.**—A gold medal is presented annually by the School of Engineering to that senior who has made the best all-around athletic record while at the School of Engineering, provided he has been in the school for at least three years.

## REQUIREMENTS FOR GRADUATION

The School grants the degrees of:

- Bachelor of Civil Engineering.
- Bachelor of Mechanical Engineering.
- Bachelor of Electrical Engineering.
- Bachelor of Chemical Engineering.

To receive the degree of the School the student must attend the School not less than one year, which must be that immediately preceding his graduation. He must complete the prescribed studies of the four years, and must, also, pass final examinations, if required, on subjects included in his curriculum. In addition to this, he must complete satisfactorily a schedule of Engineering Practice under the supervision of the Faculty. The student must, also, prepare a thesis as defined elsewhere in this catalog. All theses and records of work done in preparation of theses, are the permanent property of the School.

The degree of the School represents not only the formal completion of the subjects in the selected course of study, but also the attainment of a satisfactory standard of general efficiency. Any student who does not show in the fourth-year work of his curriculum that he has attained such a standard,

## *SCHOOL OF ENGINEERING*

may be required, before receiving the degree, to take such additional work as shall prove his ability. A fee of ten dollars (\$10) is required of all candidates for a degree. This fee must be paid at the beginning of the second semester.

### **POSITIONS HELD BY GRADUATES**

The graduates of the School have been able to secure positions of the same grade, commanding the same salaries, as the graduates of other good technical schools. Among the positions now filled by graduates of the School are: Construction engineers, electrical engineers, power plant engineers, designing draftsmen, State and Federal employees under the Civil Service, and instructors. The success of those who have been graduated from the School is the best evidence of the value and thoroughness of the training offered.



## GENERAL INFORMATION

### PROGRAM OF STUDIES

#### General Statement

The curriculums of the various Engineering Departments are given on the following pages. The first year, it will be observed, is practically the same in all cases. A few exceptions are made in curriculums where students need some special elementary training in their professional subjects, in order that they may be of more use to their employers in their Engineering Practice.

The school year comprises twenty-three weeks of class work for each division. The twenty-three weeks are divided into two terms of ten weeks each, called the First Semester and Second Semester, and a Summer Term of three weeks. In the curriculums, each course is followed by two numbers: the first number, under the column marked "Ex," indicates the number of hours of "exercise" in recitation, laboratory, drawing room, or field work a week; the second number, under the column marked "Prep," indicates the number of hours of outside "preparation" that have been assigned as the minimum weekly requirement for each course. The work is so planned that the student will be required to spend from forty-eight to fifty-two hours a school week in preparation and class work.

The number preceding each course in the schedule of the various curriculums is an index number to the description of the content of the subject in the Synopsis of Courses.

Those courses preceded by 0 indicate general subjects. The work which is under the direction of the General Departments is designated as follows: 01, Department of English; 02, Department of Mathematics; 03, Department of Physics; and 04, Department of Drawing, etc.

The subject numbers beginning with 1 indicate subjects belonging strictly to the Department of Civil Engineering; subject numbers beginning with 2, to the Department of Mechanical Engineering; 3, to the Department of Electrical Engineering; 4, to the Department of Chemical Engineering; and 5, to the Department of Administrative Engineering.

## *SCHOOL OF ENGINEERING*

### **CIVIL ENGINEERING**

The Civil Engineering curriculum is designed to give the student a broad education in those subjects which form the basis of all branches of technical education, and a special training in those subjects comprised under the term "Civil Engineering." The student receives a sound training, both theoretical and practical, in the sciences upon which professional practice is based.

Civil Engineering covers such a broad field that no one can become expert in its whole extent. It includes topographical engineering, municipal engineering, railroad engineering, structural engineering, and hydraulic and sanitary engineering. It covers land surveying, the building of railroads, harbors, docks, and similar structures; the construction of sewers, waterworks, roads and streets; the design and construction of girders, roofs, trusses, bridges, buildings, walls, foundations, and all fixed structures. All of these branches of engineering rest, however, upon a relatively compact body of principles, and in these principles the students are trained by practice in the class room, drawing room, the field, and the testing laboratory.

The curriculum is designed to prepare the young engineer to take up the work of the design and construction of structures, to aid in the location and construction of steam and electric railways, and to undertake intelligently supervision of work in the allied fields of mining, architectural, and electrical engineering, and general contracting.

# CURRICULUM I. CIVIL ENGINEERING

## FIRST YEAR

FIRST SEMESTER		Hours per week Ex. Prep.	SECOND SEMESTER		Hours per week Ex. Prep.
010-1	English	3 6	010-1	English	3 6
020-1	College Physics	3 6	022-1	Analytic Geometry	4 6
021-1	Trigonometry	4 6	031-1	Physics	4 8
030-1	Physics	2 4	034-1	Physics Laboratory	2 2
041-1	Mechanical Drawing	5 0	041-2	Mechanical Drawing	4 0
060-1	Physical Training	2 0	060-1	Physical Training	2 0
11-1	Surveying	2 4	11-2	Surveying	2 4
11-3	Surveying, F. & P.	5 0	11-4	Surveying, F. & P.	5 0

### SUMMER TERM

012-1	History of Science	5	10
043-1	Descriptive Geometry	20	10

## SECOND YEAR

FIRST SEMESTER		Hours per week Ex. Prep.	SECOND SEMESTER		Hours per week Ex. Prep.
023-1	Differential Calculus	4 6	023-2	Integral Calculus	3 6
032-1	Light	3 3	033-1	Heat	3 4
034-2	Physics Laboratory	2 2	034-3	Physics Laboratory	2 2
050-1	Engineering Conference	2 0	050-1	Engineering Conference	2 0
11-5	Surveying	2 4	12-1	Railroad Surveying	3 4}
11-6	Surveying, F. & P.	5 0	12-2	Rrd. Surveying, F. & P.	5 0
21-1	Applied Mechanics	3 6	21-2	Applied Mechanics	3 6
30-1	Elements of Electricity	3 3	30-3	Applied Electricity	3 3

### SUMMER TERM

30-4	Applied Electricity Laboratory	15	30
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## THIRD YEAR

FIRST SEMESTER		Hours per week Ex. Prep.	SECOND SEMESTER		Hours per week Ex. Prep.
013-1	Government	2 4	014-1	Economics	2 4
050-1	Engineering Conference	2 0	050-1	Engineering Conference	2 0
11-8	Topographical Drawing	3 0	14-1	Theory of Structures	3 6
12-3	Railroad Engineering	2 4	14-2	Structural Drawing	3 0
12-4	Rrd. Engineering, F. & P.	5 0	16-2	Testing Materials Lab.	2 2
13-1	Hydraulics	3 6	21-3	Strength of Materials	3 6
16-4	Geology	2 4	23-3	Heat Engineering	3 6
21-3	Strength of Materials	3 6	40-1	Inorganic Chemistry	4 4

### SUMMER TERM

042-5	Engineering Drawing	25	20
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## FOURTH YEAR

FIRST SEMESTER		Hours per week Ex. Prep.	SECOND SEMESTER		Hours per week Ex. Prep.
050-1	Engineering Conference	2 0	050-1	Engineering Conference	2 0
052-1	Thesis	1 3	052-1	Thesis	1 6
14-3	Engineering Structures	6 9	14-3	Engineering Structures	6 9
14-4	Structural Design	6 3	14-4	Structural Design	6 3
15-1	Concrete	2 4	15-1	Concrete	2 4
15-2	Concrete Design	3 0	15-2	Concrete Design	3 0
16-1	Materials	2 4	17-1	Highway Engineering	2 4
16-3	Foundations	2 2			

## *SCHOOL OF ENGINEERING*

### **MECHANICAL ENGINEERING**

The Mechanical Engineering Curriculum is designed to give the student a broad foundation in those fundamental subjects which form the basis for all professional engineering practice, and especially to equip the young engineer with a knowledge of the various phases of Mechanical Engineering. The curriculum embraces instruction by text-book, lecture, laboratory, and workshop practice, with special reference to the following branches: applied mechanics, heat engineering, industrial engineering, hydraulic engineering, applied electricity, and machine design.

The instruction aims to develop in the student the ability to think clearly and logically in the application of fundamental principles to engineering problems. The class-room work in the professional subjects is arranged with due regard to modern industrial conditions, in order that the student may connect theory with practice and appreciate the necessity of both in order to become a successful engineer. With this in view, special courses are given involving a discussion of problems which have presented themselves to the students and requiring a familiarity with the contents of current engineering periodicals. At all times it is sought to develop self-confidence in the student, and he is encouraged to take the initiative.

## CURRICULUM II. MECHANICAL ENGINEERING

### FIRST YEAR

FIRST SEMESTER		Hours per week Ex. Prep.	SECOND SEMESTER		Hours per week Ex. Prep.
010-1	English.....	3 6	010-1	English .....	3 6
020-1	College Algebra .....	3 6	022-1	Analytic Geometry .....	4 6
021-1	Trigonometry .....	4 6	031-1	Physics .....	4 8
030-1	Physics.....	2 4	034-1	Physics Laboratory .....	2 2
041-1	Mechanical Drawing ...	5 0	041-3	Mechanical Drawing ...	9 0
060-1	Physical Training.....	2 0	060-1	Physical Training .....	2 0
24-1	Production Engineering .	2 3	24-2	Production Engineering .	2 3
40-1	Inorganic Chemistry ....	4 4			

### SUMMER TERM

012-1	History of Science .....	5	10
043-1	Descriptive Geometry ....	20	10

### SECOND YEAR

FIRST SEMESTER		Hours per week Ex. Prep.	SECOND SEMESTER		Hours per week Ex. Prep.
023-1	Differential Calculus ...	4 6	023-2	Integral Calculus .....	3 6
032-1	Light .....	3 3	033-1	Heat.....	3 4
034-2	Physics Laboratory .....	2 2	034-3	Physics Laboratory .....	2 2
042-3	Machine Drawing .....	6 0	044-3	Mechanism .....	6 6
044-2	Mechanism .....	2 4	050-1	Engineering Conference ...	2 0
050-1	Engineering Conference .	2 0	21-2	Applied Mechanics .....	3 6
21-1	Applied Mechanics .....	3 6	30-3	Applied Electricity .....	3 3
30-1	Elements of Electricity .	3 3			

### SUMMER TERM

30-4	Applied Electricity Laboratory	15	30
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### THIRD YEAR

FIRST SEMESTER		Hours per week Ex. Prep.	SECOND SEMESTER		Hours per week Ex. Prep.
013-1	Government .....	2 4	014-1	Economics.....	2 4
050-1	Engineering Conference .	2 0	050-1	Engineering Conference ..	2 0
13-1	Hydraulics.....	3 6	13-2	Hydraulic Motors .....	2 4
21-3	Strength of Materials ...	3 6	21-3	Strength of Materials ...	3 6
22-1	Graphical Analysis.....	6 3	22-2	Machine Design .....	6 3
23-1	Heat Engineering .....	3 6	22-5	Mechanism of Machines. .	3 3
24-3	Power Plant Equipment .	2 4	23-1	Heat Engineering .....	3 6

### SUMMER TERM

23-4	Steam Turbines .....	5	10
23-6	Engineering Laboratory ....	15	15

### FOURTH YEAR

FIRST SEMESTER		Hours per week Ex. Prep.	SECOND SEMESTER		Hours per week Ex. Prep.
050-1	Engineering Conference .	2 0	050-1	Engineering Conference ..	2 0
052-1	Thesis.....	1 3	052-1	Thesis .....	1 6
15-1	Concrete .....	2 4	15-1	Concrete .....	2 4
15-2	Concrete Design .....	3 0	15-2	Concrete Design .....	3 0
16-1	Materials .....	2 4	22-3	Machine Design .....	6 3
22-3	Machine Design .....	6 3	24-4	Power Plant Engineering .	3 6
23-5	Heat Engineering .....	3 6	24-6	Standard Eng. Products and Processes .....	2 4
25-1	Industrial Plants .....	4 6	25-1	Industrial Plants .....	6 3

## *SCHOOL OF ENGINEERING*

### **ELECTRICAL ENGINEERING**

Probably none of the branches of scientific knowledge has been so markedly modified during the past decade as that relating to Electricity, nor has any other exerted such a profound influence upon the scientific thought of the period. A science, like a planet, grows in the main by a process of infinitesimal accretion. Its theory is built like a cathedral through the addition by many builders of many different elements, and this is pre-eminently true of Electricity. It is absolutely essential that the electrical engineer who hopes to make a success of his work should be able to grasp readily and absorb effectively the meaning and content of the many scientific memoirs recording the results of research bearing upon and directly influencing his chosen branch of engineering.

He must have a thorough appreciation of physical theory, a clear understanding of chemical principles, and a broad working knowledge of mathematics. It is essential that each student planning to take this curriculum should realize the fundamental necessity of obtaining a solid grounding in these three subjects upon which the success of his future work will definitely hinge, nor can he be too strongly urged to include physics in his high school preparatory course if he hopes to avoid difficulty in the earlier years.

It is not the purpose of the curriculum to attempt the impossible in aiming to turn out electrical engineers, fully trained in all the branches of the science, especially as it is becoming daily more differentiated and specialized. The curriculum is designed rather to lay a broad and secure foundation for future progress along the lines of activity which may particularly appeal to each individual student and give him a good working knowledge of the essential principles which underlie each of the more specialized branches of professional work.

Parallel with the theoretical work runs a carefully planned course of laboratory instruction which is intended to develop the student's power of accurate observation, of planning work and methods of procedure for himself with due regard to saving of time and labor and precision of the results attained.

# CURRICULUM III. ELECTRICAL ENGINEERING

## FIRST YEAR

FIRST SEMESTER		Hours per week Ex. Prep.	SECOND SEMESTER		Hours per week Ex. Prep.
010-1	English	3 6	010-1	English	3 6
020-1	College Algebra	3 6	022-1	Analytic Geometry	4 6
021-1	Trigonometry	4 6	031-1	Physics	4 8
030-1	Physics	2 4	034-1	Physics Laboratory	2 2
041-1	Mechanical Drawing	5 0	041-3	Mechanical Drawing	9 0
060-1	Physical Training	2 0	060-1	Physical Training	2 0
31-1	Elements of Elect. Eng.	2 3	32-1	Elect. Eng. I	4 4
40-1	Inorganic Chemistry	4 4			

## SUMMER TERM

012-1	History of Science	5	10
043-1	Descriptive Geometry	20	10

## SECOND YEAR

FIRST SEMESTER		Hours per week Ex. Prep.	SECOND SEMESTER		Hours per week Ex. Prep.
023-1	Differential Calculus	4 6	023-2	Integral Calculus	3 6
032-1	Light	3 3	033-1	Heat	3 4
034-2	Physics Laboratory	2 2	034-3	Physics Laboratory	2 2
050-1	Engineering Conference	2 0	050-1	Engineering Conference	2 0
21-1	Applied Mechanics	3 6	21-2	Applied Mechanics	3 6
32-3	Elect. Eng. II	3 6	32-3	Elect. Eng. II	4 6
32-4	Elect. Eng. II Lab.	6 3	32-4	Elect. Eng. II Lab.	6 3

## SUMMER TERM

042-5	Engineering Drawing	25	20
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## THIRD YEAR

FIRST SEMESTER		Hours per week Ex. Prep.	SECOND SEMESTER		Hours per week Ex. Prep.
013-1	Government	2 4	014-1	Economics	2 4
050-1	Engineering Conference	2 0	050-1	Engineering Conference	2 0
21-4	Strength of Materials	3 6	13-3	Hydraulics	2 4
23-1	Heat Engineering	3 6	23-1	Heat Engineering	3 6
32-6	Elect. Eng. III Lab.	6 3	32-6	Elect. Eng. III Lab.	6 3
32-2	Elect. Eng. III	3 6	32-7	Elect. Eng. III	3 6
33-1	Elect. Measurements	2 3	33-1	Elect. Measurements	2 3
			33-2	Elect. Measurements Lab.	3 0

## SUMMER TERM

33-2	Elect. Measurements Lab.	25	20
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## FOURTH YEAR

FIRST SEMESTER		Hours per week Ex. Prep.	SECOND SEMESTER		Hours per week Ex. Prep.
050-1	Engineering Conference	2 0	050-1	Engineering Conference	2 0
052-1	Thesis	1 3	052-1	Thesis	1 6
13-2	Hydraulic Motors	2 4	24-6	Standard Eng. Products	
23-2	Engineering Laboratory	2 2		and Processes	2 4
32-8	Elect. Eng. IV Lab.	6 3	32-8	Elect. Eng. IV Lab.	6 3
32-9	Elect. Eng. IV	4 8	32-9	Elect. Eng. IV	4 8
34-1	Elect. Eng. V	4 6	34-1	Elect. Eng. V	4 6
35-1	Advanced Electricity	2 3	35-1	Advanced Electricity	2 3

## *SCHOOL OF ENGINEERING*

### **CHEMICAL ENGINEERING**

The efficiency of any industrial chemical enterprise depends not only upon a knowledge of the chemical reactions forming the basis of the process, but also upon a knowledge of the mechanical principles on which depend the design, construction and maintenance of the plant for the carrying on of these reactions. Owing to the keen competition among industries which must follow the abnormal war-time production, it will be necessary to maintain the highest possible efficiency.

The purpose of this curriculum is to prepare students capable of filling the demand for trained men competent to build and operate manufacturing industries based upon chemical principles at their maximum efficiency. The professional work of the curriculum falls naturally into three groups: First, courses which provide a knowledge of the fundamental principles of chemistry. Second, those courses which furnish a knowledge of mechanical engineering. Third, engineering practice in which the student becomes familiar with the many applications of theoretical principles.

The laboratory work has been planned not only to familiarize the student with many types of chemical compounds and apparatus, but also to train the student to be an exact and logical thinker, and to encourage a desire for the application of his knowledge and training to the investigation and solution of the many problems which modern industry presents.



# CURRICULUM IV. CHEMICAL ENGINEERING

## FIRST YEAR

FIRST SEMESTER		Hours per week Ex. Prep.	SECOND SEMESTER		Hours per week Ex. Prep.
010-1	English.....	3 6	010-1	English .....	3 6
020-1	College Algebra .....	3 6	022-1	Analytic Geometry .....	4 6
021-1	Trigonometry .....	4 6	031-1	Physics .....	4 8
030-1	Physics.....	2 4	034-1	Physics Laboratory .....	2 2
041-1	Mechanical Drawing .....	5 0	041-2	Mechanical Drawing .....	4 0
060-1	Physical Training.....	2 0	060-1	Physical Training .....	2 0
41-1	Inorganic Chemistry .....	4 4	41-1	Inorganic Chemistry .....	4 4
41-2	Inorganic Chemistry Lab. ....	5 0	41-2	Inorganic Chemistry Lab. ....	5 0

### SUMMER TERM

42-1	Qualitative Analysis .....	10	20
42-2	Qualitative Analysis Lab. ....	28	0

## SECOND YEAR

FIRST SEMESTER		Hours per week Ex. Prep.	SECOND SEMESTER		Hours per week Ex. Prep.
023-1	Differential Calculus ....	4 6	011-1	German .....	2 4
032-1	Light .....	3 3	023-2	Integral Calculus .....	3 6
034-2	Physics Laboratory .....	2 2	033-1	Heat .....	3 4
050-1	Engineering Conference .....	2 0	034-3	Physics Laboratory .....	2 2
21-1	Applied Mechanics .....	3 6	050-1	Engineering Conference .....	2 0
30-1	Elements of Electricity .....	3 3	21-2	Applied Mechanics .....	3 6
43-1	Quantitative Analysis .....	2 4	30-3	Applied Electricity .....	3 3
32-2	Quantitative Analy. Lab. ....	5 0	43-2	Quant. Analysis Lab. ....	5 0

### SUMMER TERM

30-4	Applied Electricity Laboratory ..	15	30
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## THIRD YEAR

FIRST SEMESTER		Hours per week Ex. Prep.	SECOND SEMESTER		Hours per week Ex. Prep.
011-2	German .....	2 2	014-1	Economics.....	2 4
013-1	Government .....	2 4	050-1	Engineering Conference .....	2 0
050-1	Engineering Conference .....	2 0	13-3	Hydraulics .....	2 4
21-4	Strength of Materials ....	3 6	23-3	Heat Engineering .....	3 6
44-1	Technical Analysis .....	3 6	44-3	Technical Analysis .....	2 4
44-2	Technical Analysis Lab. ....	5 0	45-1	Organic Chemistry .....	3 6
45-1	Organic Chemistry.....	3 6	45-2	Organic Chemistry Lab. ....	5 0
45-2	Organic Chemistry Lab. ....	5 0	46-2	Chemical Engineering ...	2 4

### SUMMER TERM

042-5	Engineering Drawing .....	25	20
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## FOURTH YEAR

FIRST SEMESTER		Hours per week Ex. Prep.	SECOND SEMESTER		Hours per week Ex. Prep.
050-1	Engineering Conference ..	2 0	050-1	Engineering Conference ..	2 0
052-1	Thesis.....	1 6	052-1	Thesis .....	1 6
45-3	Organic Chemistry.....	2 6	45-3	Organic Chemistry .....	2 6
45-4	Organic Chemistry Lab. ....	5 0	45-4	Organic Chemistry Lab. ....	5 0
46-3	Chemical Engineering .....	3 6	46-3	Chemical Engineering .....	3 6
47-1	Industrial Chemistry .....	3 3	47-1	Industrial Chemistry .....	2 2
47-2	Industrial Chemistry Lab. ....	4 0	47-2	Industrial Chemistry Lab. ....	4 0
48-1	Physical Chemistry .....	4 8	48-1	Physical Chemistry .....	4 8

## **ADMINISTRATIVE ENGINEERING**

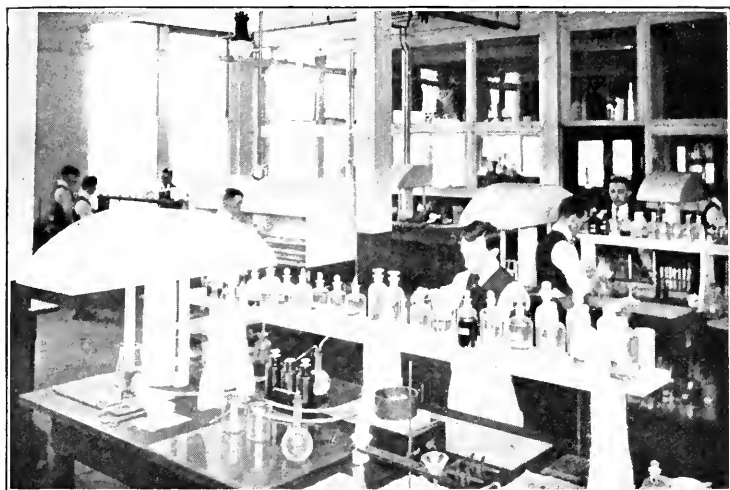
The specialized curriculums for engineering students tend toward specific training of the students in design and construction for railroad, power plant and industrial enterprises. Recently, however, need has been expressed for men capable of handling not only technical, but also administrative problems, for in many cases of technical positions there is a large measure of administrative responsibility also.

The Administrative Engineering curriculum has been planned to provide a training for men who desire a knowledge of both scientific and business principles. The curriculum combines the instruction in engineering subjects with the study of business organization and management, labor problems, business law, and accounting. The course is designed as a groundwork for efficient handling of administrative problems whenever encountered in conjunction with engineering work.

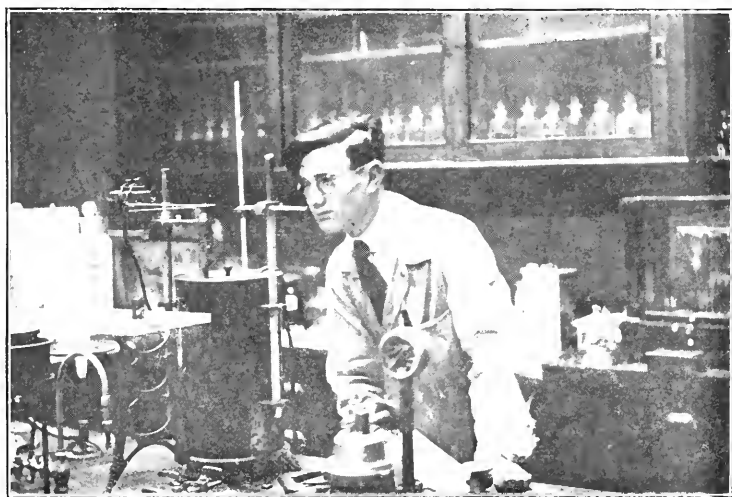
The curriculum is open to students in two options: (1) Civil Engineering and (2) Mechanical Engineering. Those who elect option (1) will have in mind positions with consulting engineers, construction companies, and public service corporations engaged in operating transportation systems, water works, and the like. Students who elect option (2) will have in mind positions with industrial plants manufacturing paper, rubber goods, shoes, cotton and woolen goods, hardware, etc.

Students completing this curriculum satisfactorily with options (1) or (2) will become candidates for the degrees of Bachelor of Civil Engineering or Bachelor of Mechanical Engineering, respectively.

# Chemical Engineering Students



Analyzing Metals  
GENERAL ELECTRIC COMPANY, LYNN

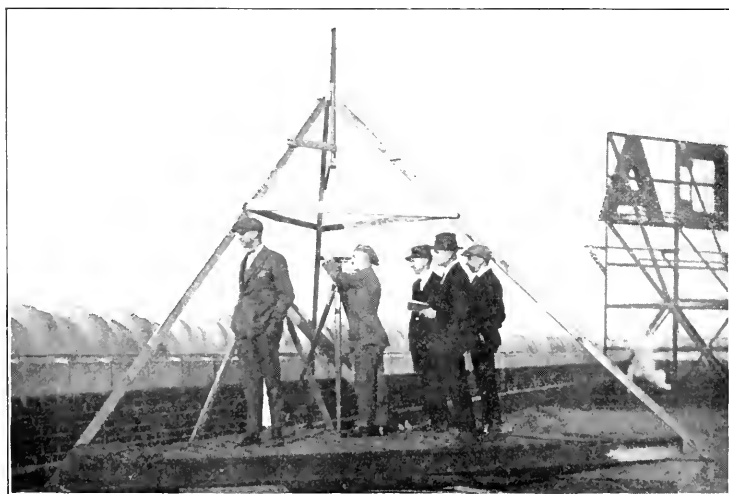


Calorimeter Testing  
INDUSTRIAL ENGINEERING CORPORATION

## Civil Engineering Students



Giving Lines and Grades for Concrete Construction  
TURNER CONSTRUCTION COMPANY



Triangulation Surveying  
NORTHEASTERN COLLEGE

# CURRICULUM V. ADMINISTRATIVE ENGINEERING

## FIRST YEAR

FIRST SEMESTER		Hours per week Ex. Prep.	SECOND SEMESTER		Hours per week Ex. Prep.
010-1	English	3 6	010-1	English	3 6
020-1	College Algebra	3 6	022-1	Analytic Geometry	4 6
021-1	Trigonometry	4 6	031-1	Physics	4 8
030-1	Physics	2 4	034-1	Physics Laboratory	2 2
041-1	Mechanical Drawing	5 0	041-3	Mechanical Drawing	9 0
060-1	Physical Training	2 0	060-1	Physical Training	2 0
11-7	Surveying	3 3	24-2	Production Engineering	2 3
24-1	Production Engineering	2 3			

### SUMMER TERM

012-1	History of Science	5	10
043-1	Descriptive Geometry	20	10

## SECOND YEAR

FIRST SEMESTER		Hours per week Ex. Prep.	SECOND SEMESTER		Hours per week Ex. Prep.
023-1	Differential Calculus	4 6	023-2	Integral Calculus	3 6
032-1	Light	3 3	033-1	Heat	3 4
034-2	Physics Laboratory	2 2	034-3	Physics Laboratory	2 2
042-3	Machine Drawing	6 0	044-3	Mechanism	6 6
044-2	Mechanism	2 4	050-1	Engineering Conference	2 0
050-1	Engineering Conference	2 0	21-2	Applied Mechanics	3 6
21-1	Applied Mechanics	3 6	30-3	Applied Electricity	3 3
30-1	Elements of Electricity	3 3			

### SUMMER TERM

30-4	Applied Electricity Laboratory	15	30
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## THIRD YEAR

FIRST SEMESTER		Hours per week Ex. Prep.	SECOND SEMESTER		Hours per week Ex. Prep.
013-1	Government	2 4	014-1	Economics	2 4
050-1	Engineering Conference	2 0	050-1	Engineering Conference	2 0
21-3	Strength of Materials	3 6	21-3	Strength of Materials	3 6
50-1	Industrial Organization	2 4	50-2	Industrial Finance	2 4
51-1	Principles of Accounting	3 6	52-1	Banking and Securities	3 6
OPTION 1			OPTION 1		
11-8	Topographical Drawing	3 0	14-1	Theory of Structures	3 6
13-1	Hydraulics	3 6	14-2	Structural Drawing	3 0
16-4	Geology	2 4	16-2	Testing Materials Lab.	2 2
OPTION 2			OPTION 2		
22-1	Graphical Analysis	6 3	22-2	Machine Design	6 3
23-1	Heat Engineering	3 6	23-1	Heat Engineering	3 6

### SUMMER TERM

50-3	Corporations	5	10
51-2	Cost Accounting	10	20

## FOURTH YEAR

FIRST SEMESTER		Hours per week Ex. Prep.	SECOND SEMESTER		Hours per week Ex. Prep.
050-1	Engineering Conference	2 0	050-1	Engineering Conference	2 0
052-1	Thesis	1 3	052-1	Thesis	1 6
50-4	Business Management	3 6	50-6	Business Administration	3 6
50-5	Marketing	3 6	53-1	Business Law	2 4
OPTION 1			OPTION 1		
14-3	Engineering Structures	6 9	14-3	Engineering Structures	6 9
14-4	Structural Design	6 3	14-4	Structural Drawing	6 3
OPTION 2			OPTION 2		
16-1	Materials	2 4	13-3	Hydraulics	2 4
22-3	Machine Design	6 3	24-4	Power Plant Engineering	3 6
25-1	Industrial Plants	4 6	25-1	Industrial Plants	6 3

## *SCHOOL OF ENGINEERING*

### **SUBJECTS OF INSTRUCTION**

Instruction is given by lectures and recitations, and by practical exercises in the field, in the laboratories, and in the drawing rooms. A great value is set upon the educational effect of these exercises, and they form the foundation of each of the five curriculums. In many branches the instruction given differs widely from available texts in which cases notes on the lectures and laboratory work are usually issued to the students. Besides oral examinations in connection with the ordinary exercises, written examinations are held from time to time.

In the following pages will be found a more or less detailed statement of the scope of the subjects offered in the various curriculums. The subjects are classified, as far as possible, related studies being arranged in sequence. The subjects are numbered for convenience in consulting the various curriculums. A complete table of the Subjects of Instruction will be found at the end of the catalog. Under each subject is given a list of the courses required as preparation for that subject. These requirements are made as it is felt that the student must have become proficient in all these subjects for a clear comprehension of the advanced work. In some cases, the required preparation may be taken simultaneously and must be completed before further advanced work is undertaken.

Students electing any subject must complete that subject in order to be a candidate for a degree.

By careful consideration of the curriculums, in connection with the following Program of Studies, the applicant for a special curriculum may select, for the earlier part of that curriculum, such subjects as will enable him to pursue later those more advanced subjects which he may particularly desire. Applications for exception from the required preparation as stated in connection with each subject described below, will be passed on by the Faculty.

The topics included in the list which follows are subject to change at any time by action of the School authorities.

## PROGRAM OF STUDIES

In the following synopses under each subject, "curriculum" refers to the five principal curriculums of Civil I, Mechanical II, Electrical III, Chemical IV, and Administrative V. In the case of curriculum V,  $V_1$  refers to the Civil Engineering option and  $V_2$  to the Mechanical option, and V to both options in which that particular subject is required. The courses themselves are arranged in groups according to the departments under which the course falls.

The "year" refers to the time when the subject is ordinarily taken under the regular schedule, "both semesters" referring to both the First and Second Semesters, and "Summer Term" referring to the three-week term starting in June or in August. "Preparation" gives the courses by number that the student must have taken and passed satisfactorily before he may be permitted to take the course under discussion, except in a few stated cases where the preparation may be taken simultaneously. Under the number of "hours per week," "Ex." refers to the hours of class room or laboratory work, and "Prep." to the hours of outside preparation. The main body of the synopsis shows in a brief form the ground covered by the course. At the end of the synopsis is given the names of the instructors for that particular subject; the first named being in charge.

# SCHOOL OF ENGINEERING

## GENERAL DEPARTMENTS

### Liberal Subjects

#### 010-1 ENGLISH

*All curriculums  
First year, both semesters*

*Preparation: — —  
Three hours per week*

English Composition especially adapted to the needs of men who expect to follow the engineering profession. Watt's "The Composition of Technical Papers" forms the basis of the course. The work consists of lectures, recitations, class discussions, weekly themes, tests, reports, and a limited amount of outside reading, particularly in modern scientific journals. The material for the themes is entirely drawn from, or related to, the student's study in the laboratory and experience in his Engineering Practice with the co-operating firm.

PROFESSOR MELVIN.  
MR. JEFFERY.

#### 011-1 GERMAN

*Curriculum: IV  
Second year, second semester*

*Preparation: — —  
Two hours per week*

All students in the Chemical Engineering Curriculum are required to show before graduation a sufficient knowledge of the German language to be able to read technical books and scientific articles written in the German language. For students who have not obtained this knowledge before entering college, this course will offer a study of grammatical forms, syntax, and vocabulary through composition exercises and rapid reading. The entire purpose is to give the student a knowledge of German grammar with a working vocabulary of scientific terms.

MR. PERKINS.

#### 011-2 GERMAN

*Curriculum: IV  
Third year, first semester*

*Preparation: 011-1  
Two hours per week*

A continuation of German 011-1.

MR. PERKINS.



## PROGRAM OF STUDIES

### 012-1 HISTORY OF SCIENCE

*Curriculums: I, II, III, V*

*Preparation: — —*

*First year, summer term*

*Five hours per week*

The aim is to give a broad view of the growth of science, extend the range of the student's interests, and encourage discriminating scientific reading. Considerable collateral reading is required of the students.

PROFESSOR DURKEE.

### 013-1 GOVERNMENT

*All curriculums*

*Preparation: — —*

*Third year, first semester*

*Two hours per week*

The theory and practice of government in the existing forms of national organization in the United States and Great Britain. The relations between the executive, the legislature, and the judiciary will form the basis of investigation. In the lectures additional illustrative material will be taken from France, Switzerland, and Canada. It is hoped that the men will look on the study of government, not as academic but as practical, through constant reference to contemporary men and affairs.

PROFESSOR MELVIN.

### 014-1 ECONOMICS

*All curriculums*

*Preparation: — —*

*Third year, second semester*

*Two hours per week*

A rapid survey of the elementary principles of economics, such as those of wealth, labor, capital, value, price, and so forth. Particular attention is paid to the consideration of money, the mechanism of exchange, banking and its relation to the finances of corporations. In studying the distribution of wealth, considerable attention is paid to the questions of wages and value, and their relation to business profits.

PROFESSOR SPEAR.

## Mathematics

### 020-1 COLLEGE ALGEBRA

*All curriculums*

*Preparation: — —*

*First year, first semester*

*Three hours per week*

Beginning with quadratic equations, the student has an opportunity to review the various operations of simpler

## SCHOOL OF ENGINEERING

algebra. A study of the theory of exponents, series, determinants, principles of theory of equations, graphs, permutations and combinations, and principles of vector analysis is also included.

PROFESSORS SPEAR AND COOLIDGE.  
MESSRS. GOODRIDGE AND JEFFERY.

### 021-1 TRIGONOMETRY

*All curriculums*

*Preparation: 020-1  
taken concurrently*

*First year, first semester*

*Four hours per week*

Trigonometric functions as ratios; transformation and solution of trigonometric equations; inverse functions; circular functions; goniometry; logarithms; solution of exponential equations; solution of right and oblique triangles; law of sines, cosines, and tangents; areas. Considerable practice in calculations of practical problems enable the student to apply his trigonometry to problems arising in Engineering Practice at an early stage. Explanation of laws of spherical trigonometry.

PROFESSORS BENEDICT AND COOLIDGE.  
MESSRS. GOODRIDGE, PORTER AND STEARNS.

### 022-1 ANALYTIC GEOMETRY

*All curriculums*

*Preparation: 021-1*

*First year, second semester*

*Four hours per week*

Cartesian and polar co-ordinates. The equations of straight lines and simpler curves derived from the geometric properties of the curves. Properties of curves derived from their equations. Thorough study of straight line, circle, and conic sections. Intersection of curves, transformation of axes. Plotting of polynomials, including exponential, trigonometric, and logarithmic functions. Loci problems. An endeavor is made to develop the analytic sense in the student throughout the course, rather than to rely on the use of formulae.

PROFESSOR SPEAR.  
MR. GRAMSTORFF.

### 023-1 DIFFERENTIAL CALCULUS

*All curriculums*

*Preparation: 022-1*

*Second year, first semester*

*Four hours per week*

Theory of limits; rates of change; differentiation of algebraic, trigonometric, exponential, and logarithmic func-

## PROGRAM OF STUDIES

tions; slopes of curves; maxima and minima, with practical problems; partial differentiation; derivatives of higher order; lengths of curves; radius of curvature, etc.; expansion of functions, series.

Although the subject matter deals with considerable theory, constant sight is kept of the practical application of all the theory. The geometric interpretation of every new subject is carefully defined, and problems are continually solved dealing in practical applications of theory. Velocity and acceleration problems in mechanics are typical of those used for application of differentiation.

PROFESSOR SPEAR.

### 023-2 INTEGRAL CALCULUS

*All curriculums*

*Preparation: 023-1*

• *Second year, second semester*

*Three hours per week*

A continuation of Calculus, 023-1. Integration as the inverse of differentiation; intergration as a summation; definite integrals; use of tables; double and triple integrals; areas in rectangular and polar co-ordinates; volumes; center of gravity; moment of inertia. Practical problems depending on the differential and integral calculus for solution. Solution of simpler differential equations.

PROFESSOR SPEAR.

## Physics

### 030-1 PHYSICS

*All curriculums*

*Preparation: — —*

*First year, first semester*

*Two hours per week*

A course in the fundamental principles of elementary Physics to be taken by students who have not had sufficient preparation for the subsequent courses in Physics. The course includes the principles of mechanics, heat, light, and sound, with problems, lectures, and experiments.

PROFESSOR COOLIDGE.

### 031-1 PHYSICS

*All curriculums*

*Preparation: 021-1, 030-1*

*First year, second semester*

*Four hours per week*

A study of the principles of mechanics, statics, and dynamics. The subjects studied are: equilibrium of bodies acted

## SCHOOL OF ENGINEERING

upon by parallel forces, equilibrium of bodies acted upon by concurrent forces, vectors, relative velocities, uniform velocity, uniformly accelerated motion, simple harmonic motion, motion on an inclined plane, energy, work, horsepower, angular velocity and acceleration, moment of inertia, kinetic energy of rotation, centrifugal force, fluid pressure, density and specific gravity of solids and liquids, Boyles law, and hydrometers. It is the purpose of the course to lay a thorough foundation for subsequent study of experimental and technical physics. Hence it is planned with immediate reference to familiarize the pupil with the fundamental principles of the science.

PROFESSOR COOLIDGE.

MESSRS. STEARNS, GOODRIDGE AND GRAMSTORFF.

### 032-1 LIGHT

*All curriculums*

*Preparation: 021-1, 030-1*

*Second year, first semester*

*Three hours per week*

The study of Light, including wave motion, mirrors, refraction, lenses, optical instruments, dispersion, interference, diffraction, and polarization of light.

PROFESSOR COOLIDGE.

### 033-1 HEAT

*All curriculums*

*Preparation: 030-1*

*Second year, second semester*

*Three hours per week*

The topics studied are: thermometry, expansion of solids, liquids, and gases, calorimetry, change of state including latent heat of fusion and vaporization (sublimation), triple point diagram, conduction and radiation, and the mechanical equivalent of heat.

PROFESSOR COOLIDGE.

### 034-1 PHYSICS LABORATORY

*All curriculums*

*Preparation: 031-1*

*taken concurrently*

*First year, second semester*

*Two hours per week*

A series of experiments of an elementary grade for students who are found to be deficient in the simpler fundamentals of Physics.

PROFESSOR COOLIDGE.

MR. STEARNS AND ASSISTANTS.

## PROGRAM OF STUDIES

### 034-2 PHYSICS LABORATORY

*All curriculums*

*Second year, first semester*

*Preparation: 034-1*

*Two hours per week*

Experiments on mechanics performed by each student, supplementing the lecture and class room work in Physics 031-1. The experiments include the use of verniers, micrometers, and spherometers, calculation of true weights, determination of specific gravities of solids by various methods, areas by planimeter, modulus of elasticity, and motion on an inclined plane.

PROFESSOR COOLIDGE.  
MR. STEARNS AND ASSISTANTS.

### 034-3 PHYSICS LABORATORY

*All curriculums*

*Second year, second semester*

*Preparation: 032-1, 033-1  
taken concurrently*

*Two hours per week*

A series of experiments on Light and Heat to supplement the work done in Physics 032-1 and Physics 033-1. The experiments on Light include the determination of the index of refraction of a lens, the position of images in combinations of lenses, and the uses of the spectrometer and spectroscope. The experiments on Heat include the calibration of a thermometer, determination of the temperature of a mixture, the relations between the pressure and boiling point of water, and the use of the air thermometer.

PROFESSOR COOLIDGE.  
MR. STEARNS AND ASSISTANTS.

## Drawing

### 041-1 MECHANICAL DRAWING

*All curriculums*

*First year, first semester*

*Preparation: — —*

*Five hours per week*

An elementary course embracing straight line and compass exercises, geometrical constructions, lettering, orthographic projection and development.

PROFESSORS ASHLEY AND GEE.  
MR. GRAMSTORFF.

## SCHOOL OF ENGINEERING

### 041-2 MECHANICAL DRAWING

*Curriculums: I, IV*  
*First year, second semester*

*Preparation: 041-1*  
*Four hours per week*

A continuation of Mechanical Drawing 041-1, comprising problems in conic sections, isometric drawing and tracing.

PROFESSORS ASHLEY AND GEE.  
MR. GRAMSTORFF.

### 041-3 MECHANICAL DRAWING

*Curriculums: II, III, V*  
*First year, second semester*

*Preparation: 041-1*  
*Nine hours per week*

A continuation of Mechanical Drawing 041-1 comprising problems in conic sections, isometric drawing, tracing and elementary machine drawing.

PROFESSORS ASHLEY AND GEE.  
MR. GRAMSTORFF.

### 042-3 MACHINE DRAWING

*Curriculums: II, V*  
*Second year, first semester*

*Preparation: 041-3*  
*Six hours per week*

Reading and translating drawings. Detailed and assembly drawings of machine parts and simple machines are made from freehand sketches and other data, but nothing in the nature of a copy is permitted. Designed to give a thorough foundation for the study of machine design.

PROFESSORS ASHLEY AND GEE.  
MR. GRAMSTORFF.

### 042-5 ENGINEERING DRAWING

*Curriculums: I, III,\* IV*  
*Third year, summer term*

*Preparation: 041-2 or 041-3*  
*Twenty-five hours per week*

This course comprises problems in mechanical and free-hand perspective, elementary machine drawing, freehand machine sketching and problems and class room discussions on simple mechanism of machines.

PROFESSOR ASHLEY.

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\*Second year, summer term.

## PROGRAM OF STUDIES

### 043-1 DESCRIPTIVE GEOMETRY

*Curriculums: I, II, III, V*

*Preparation: 041-1*

*First year, summer term*

*Twenty hours per week*

A study of the principles of descriptive geometry and their application to engineering by the solution of many problems in which theory and practice are closely correlated. Classroom exercises are devoted entirely to drafting board problems, preparation for which is obtained by the outside study of text-book references and practical problems.

PROFESSORS ASHLEY AND GEE.

### 044-2 MECHANISM

*Curriculums: II, V*

*Preparation: 041-3*

*Second year, first semester*

*Two hours per week*

An introductory course conducted mainly by graphical methods and dealing with gear trains, velocity ratios, paths of mechanical movements and their application to velocity diagrams, quick-return mechanisms, and cams.

PROFESSOR ASHLEY.

### 044-3 MECHANISM

*Curriculums: II, V*

*Preparation: 044-2*

*Second year, second semester*

*Six hours per week*

A continuation of Mechanism 044-2, embracing a careful study of gear-tooth outlines.

PROFESSOR ASHLEY.

## General Engineering

### 050-1 ENGINEERING CONFERENCE

*All curriculums*

*Preparation: — —*

*Second, third and fourth years:  
both semesters*

*Two hours per week*

The connecting link between the industry and the classroom. The second, third and fourth-year men of each curriculum meet in four separate groups for nine of the ten meetings, during each period. Each student, in turn, gives a thirty to forty-five minute talk on some particular topic of engineering interest. This talk then becomes the subject of

## SCHOOL OF ENGINEERING

discussion by the whole class, and the problem is considered in as much detail as seems best to the instructor.

For the tenth meeting of each period all courses meet together in Bates Hall and hear some speaker on a technical subject of live interest to all engineering students.

The marks for the reports written each period while at work, and the marks for the individual talk, are averaged in due proportion to find the grade due the student.

PROFESSORS NIGHTINGALE, ALVORD, DURKEE AND ZELLER.  
MR. PERKINS.

### 052-1 THESIS

*All curriculums*

*Fourth year, both semesters*

*Preparation: Technical subjects*

*One hour per week*

Each student who is a candidate for graduation must, during his senior year, prepare and present a thesis, the satisfactory completion of which is a pre-requisite for receiving a degree from the School of Engineering. By "thesis" is meant an essay involving the statement, analysis, and solution of some problem in pure or applied science. Its purpose is to demonstrate a satisfactory degree of initiative and a power of original thought and work on the part of each candidate for an engineering degree.

The subject of the thesis is to be decided in conference between the candidate and that faculty member of the professional department to whom he is assigned for supervision in thesis work, final approval, however, resting with the head of the department. This subject may be one of structural design, research, testing, study of a commercial process, etc., but in no case would a mere resumé of prior knowledge and a discussion of the present state of the matter be acceptable. This, it is true, must normally be made, but in addition thereto there must be a certain amount of work planned and executed, aimed toward the extension of the present field of information as regards the subject chosen.

In many cases the student presents an individual thesis. However, in nearly equal number, acceptable subjects will be found necessitating the co-operation of at least two men, either of the same or sometimes of different professional



## PROGRAM OF STUDIES

departments. In such cases, each man is primarily responsible for a certain part of the work, while also making himself wholly familiar with the entire problem; and the completed thesis must show clear evidence of the evenly-balanced co-operation and labor of the men concerned.

The completed thesis will be examined for acceptance or rejection from the technical viewpoint by the professional departments interested, and then forwarded to the Dean's office, the final approval of the thesis resting with the Dean.

Upon acceptance, the thesis becomes the property of the School of Engineering, together with all apparatus and material used in connection therewith, except that hired or borrowed, or which was already the personal property of the candidate. It is not to be printed, published, nor in any other way made public except in such manner as the professional department and the Dean shall jointly approve.

For all further information, the candidate for the degree is referred to the "Directions for Theses," which he must obtain from his professional department at the beginning of his senior year.

The arrangement of hours shown in the curriculums may be varied to suit the requirements of each department.

### Physical Education

#### 060-1 PHYSICAL TRAINING

*All curriculums*

*Preparation: — —*

*First year, both semesters*

*Two hours per week*

All first-year students are required to take Physical Training. Health, strength, and vitality do not come by chance, but by obedience to natural laws. It is very essential for the students to acquire good habits of life. The work in the gymnasium is of the body building type, with plenty of competition. Regular classes in calisthenics are held under an able physical instructor.

Students who are members of the Varsity Squads in any of the major sports may be excused from Physical Training upon petition to the Faculty, providing the petition is supported by the certification of the Athletic Coach and Physical Director. Upon petition of a student to be excused from Physical

## SCHOOL OF ENGINEERING

Training, owing to physical disability, favorable action will be taken by the Faculty only when said petition is accompanied by a physician's certificate, verifying the disability.

MR. SINNETT.

### DEPARTMENT OF CIVIL ENGINEERING

#### 11-1 SURVEYING

*Curriculum: I*

*Preparation: — —*

*First year, first semester*

*Two hours per week*

Lectures, recitations, and problem work in which the following subjects are considered: the chain, tape, compass, transit, and level, methods of making and computing both closed and random traverses, location of buildings and points.

MR. INGALLS.

#### 11-2 SURVEYING

*Curriculum: I*

*Preparation: 11-1*

*First year, second semester*

*Two hours per week*

Surveying for deeds, city surveying, U. S. system of public land surveying, differential and profile leveling, theory and use of contour maps, stadia methods and various special problems.

MR. INGALLS.

#### 11-3 SURVEYING: FIELD-WORK AND PLOTTING

*Curriculum: I*

*Preparation 11-1*

*taken concurrently*

*First year, first semester*

*Five hours per week*

Two afternoons per week are devoted to preliminary practise with the standard surveying instruments. The work depends upon, and is closely allied to, the theoretical work in 11-1. The student first practises taping and chaining, then learns to use the compass for reading magnetic bearings. Next he runs a closed compass and tape traverse. Then follows practice with the transit level, and tape, concluding with a large transit and tape closed traverse. This traverse is balanced, plotted, and completed as a map. This includes the location and plotting of streets, buildings, etc., included within the traverse. Work is done on contour maps, with

## PROGRAM OF STUDIES

problems; differential and profile leveling; stadia methods; and various special problems such as layout of line and grade for a sewer or a building.

MR. INGALLS AND ASSISTANTS.

### 11-4 SURVEYING, FIELD-WORK AND PLOTTING

*Curriculum: I*

*Preparation: 11-2  
taken concurrently  
Five hours per week*

*First year, second semester*

A continuation of Surveying 11-3.

MR. INGALLS AND ASSISTANTS.

### 11-5 SURVEYING

*Curriculum: I*

*Preparation: 11-3, 11-4  
Two hours per week*

*Second year, first semester*

The student is taught the theory of plane and geodetic triangulation, the theory of the sextant, the theory of plane table topographical surveying, the adjustments of instruments, and the methods of stellar observation for the determination of azimuth. Surveying problems in review of the elementary work are assigned to make sure that the student has a comprehensive and accurate knowledge of the art.

MR. INGALLS.

### 11-6 SURVEYING, FIELD AND PLOTTING

*Curriculum: I*

*Preparation: 11-5  
taken concurrently  
Five hours per week*

*Second year, first semester*

The work follows closely and is dependent upon the theoretical work of 11-5. Actual practise is given in triangulation, work with the sextant, plane table, field adjustment of instruments and in making an observation on polaris for latitude and azimuth.

MR. INGALLS.

### 11-7 SURVEYING

*Curriculum: V*

*Preparation: — —  
Three hours per week*

*First year, first semester*

Lectures, recitations, and problems designed to give the students in Administrative Engineering instruction in the essential principles of surveying. A part of the time will be devoted to the illustration of these principles with the aid of the transit and level.

PROFESSOR ALVORD.

## SCHOOL OF ENGINEERING

### 11-8 TOPOGRAPHICAL DRAWING

*Curriculum: I, V<sub>1</sub>*

*Preparation: 11-3, 11-4*

*Third year, first semester*

*Three hours per week*

The course is devoted to the study of the conventional signs used in topographical drawing. Proficiency is sought in the use of the lettering pen, contour pen, ink and water color in map work. The various uses of a contour map are illustrated by problems in drawing.

PROFESSOR GEE.

### 12-1 RAILROAD SURVEYING

*Curriculum: I*

*Preparation: 11-5, 11-6*

*Second year, second semester*

*Three hours per week*

The course covers the principles and application of simple, compound, reversed, parabolic, and transition curves to railroad and highway location, also the principles of reconnaissance, preliminary and location survey for a railroad.

MR. INGALLS.

### 12-2 RAILROAD SURVEYING, FIELD WORK AND PLOTTING

*Curriculum: I*

*Preparation: 12-1  
taken concurrently*

*Second year, second semester*

*Five hours per week*

The work follows closely the theory of 12-1. It includes the layout in the field of various railroad curves; the reconnaissance, preliminary and location survey of a line of railroad. Drafting room problems on location of railroads and highways from existing contour maps are given.

MR. INGALLS AND ASSISTANTS.

### 12-3 RAILROAD ENGINEERING

*Curriculum: I*

*Preparation: 12-1, 12-2*

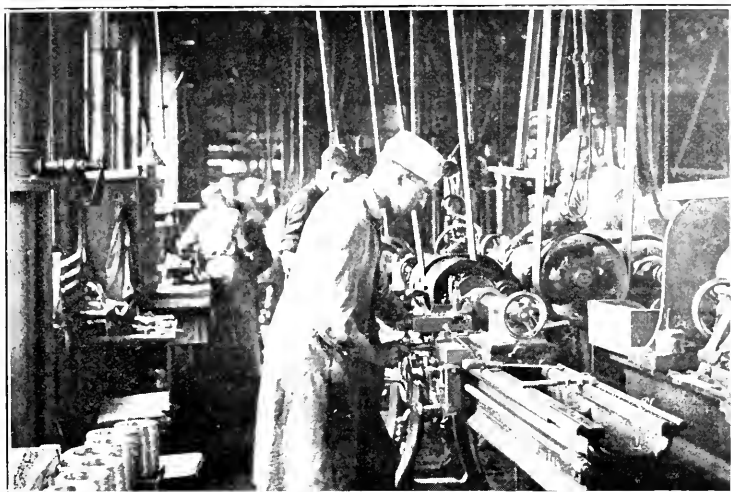
*Third year, first semester*

*Two hours per week*

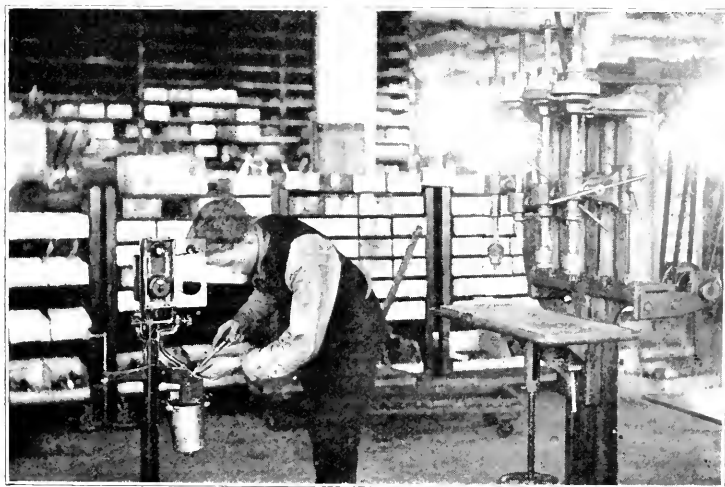
The work is a continuation of 12-1. Methods of computing excavation and embankment, including the use of tables and diagrams, are studied in detail. Further study is devoted to the effect of haul, and the use of the mass diagram in the determination of the final location. The economics of railroad location are considered.

MR. INGALLS.

# Mechanical Engineering Students

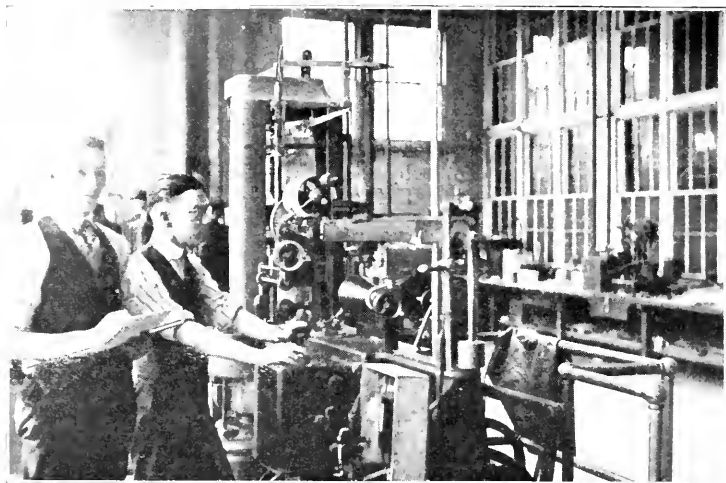


Finishing Castings  
BLANCHARD MACHINE COMPANY, CAMBRIDGE

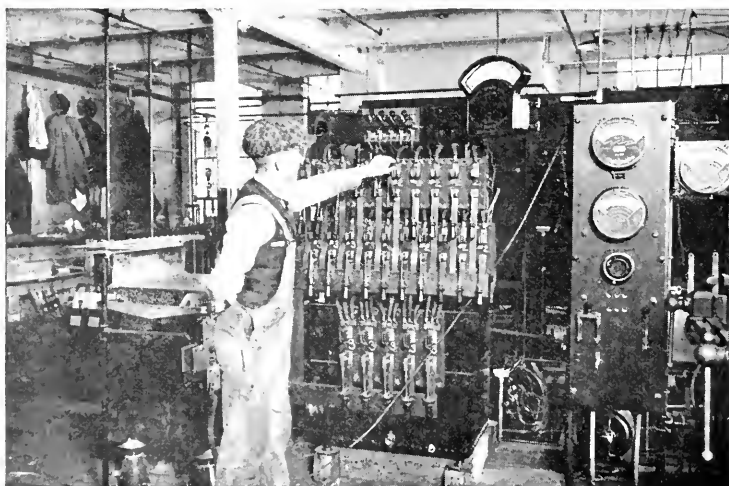


Assembling Machines  
UNITED SHOE MACHINERY CORPORATION, BEVERLY

# Electrical Engineering Students



Testing Materials  
GENERAL ELECTRIC COMPANY, LYNN



Testing a 10,000 Ampere Storage Battery Control Panel  
CONDIE ELECTRICAL MANUFACTURING COMPANY

## PROGRAM OF STUDIES

### 12-4 RAILROAD ENGINEERING, FIELD WORK AND PLOTTING

*Curriculum: I*

*Preparation: 12-3  
taken concurrently*

*Third year, first semester*

*Five hours per week*

Field work in connection with 12-3. The final location and profile of the railroad line is plotted, including the vertical, horizontal, and transition curves. A mass diagram is drawn for the earthwork, and a final computation of cost is made. The line is cross-sectioned and slope-staked.

MR. INGALLS AND ASSISTANTS.

### 13-1 HYDRAULICS

*Curriculums: I, II, V<sub>1</sub>  
Third year, first semester*

*Preparation: — —  
Three hours per week*

A study of the principles of both hydrostatics and hydrodynamics. The subjects considered are: the pressures on submerged areas together with their points of application; the laws governing the flow of fluids through orifices, short tubes, nozzles, weirs, pipe lines and open channels; and the dynamic action of water flowing over both stationary and moving curved surfaces. A short study of stream flow measurements is also included.

PROFESSOR DURKEE.

### 13-2 HYDRAULIC MOTORS

*Curriculums: II, III\*  
Third year, second semester*

*Preparation: 13-1 or 13-3  
Two hours per week*

Principles underlying the design of hydraulic turbines and motors. A complete study is also made of stream flow, storage and other details relating to hydraulic installations.

PROFESSOR ZELLER.

### 13-3 HYDRAULICS

*Curriculums: III, IV, V<sub>2</sub>†  
Third year, second semester*

*Preparation: — —  
Two hours per week*

Similar to Hydraulics 13-1, but adapted to the special needs of the students in these curriculums.

PROFESSOR DURKEE.

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\*Fourth year, first semester.

†Fourth year, second semester.

## SCHOOL OF ENGINEERING

### 14-1 THEORY OF STRUCTURES

*Curriculum: I, V<sub>1</sub>*

*Third year, second semester*

*Preparation: 21-3*

*Three hours per week*

Class and drawing-room work in studying the loads, reactions, shears, and moments acting upon structures of various kinds, such as roofs and bridges. A thorough study is also made of the various functions of the influence line; the methods used to determine the position of moving loads to produce maximum shears and moments on bridges; and the design of beams.

PROFESSOR ALVORD.

### 14-2 STRUCTURAL DRAWING

*Curriculum: I, V<sub>1</sub>*

*Third year, second semester*

*Preparation: 21-3, 041-1*

*Three hours per week*

Drawing of standard sections of structural steel shapes and connections, and the preparation of drawings representing elementary structural details. The course is designed to familiarize the student with the designing and drawing of riveted connections, and the dimensioning and detailing of structural parts.

PROFESSOR ALVORD.

### 14-3 ENGINEERING STRUCTURES

*Curriculum: I, V<sub>1</sub>*

*Fourth year, both semesters*

*Preparation: 14-1, 14-2*

*Six hours per week*

The computation and design of structures of wood, steel, and masonry by analytical and graphical methods. The subjects considered are: plate girders, roof and bridge trusses of various types, such as simple trusses, bridge trusses with secondary web systems—including Baltimore and Pettit trusses—and trusses with multiple web systems, lateral and portal bracing, transverse bents, viaduct towers, and cantilever bridges. A study is also made of the design of columns, tension members, pin and riveted truss joints, trestles of wood and steel, masonry dams, retaining walls, and arches. The student is also given training in the use of the standard handbooks in structural work. The object is to train the student thoroughly in the application of mechanics to the design of structure.

PROFESSOR ALVORD.



## PROGRAM OF STUDIES

### 14-4 STRUCTURAL DESIGN

*Curriculum: I, V<sub>1</sub>*

*Preparation: 14-3,  
taken concurrently*

*Fourth year, both semesters*

*Six hours per week*

Designing and detailing of structures, using the theory learned in Engineering Structures 14-3. Complete working drawings are ordinarily made of a single track plate girder railroad bridge, a riveted truss highway bridge, and a small concrete arch.

PROFESSOR ALVORD.

### 15-1 CONCRETE

*Curriculum: I, II*

*Preparation: 21-3*

*Fourth year, both semesters*

*Two hours per week*

Concrete as a material of construction is studied in detail, and the principles of reinforced concrete design are learned. Computations and designs are made of flat slabs, T beams, columns, footings, retaining walls, and arches.

PROFESSOR ALVORD.

### 15-2 CONCRETE DESIGN

*Curriculums: I, II*

*Preparation: 15-1,  
taken concurrently*

*Fourth year, both semesters*

*Three hours per week*

Detailing and making of complete working drawings of the concrete structures designed in Concrete 15-1.

PROFESSOR ALVORD.

### 16-1 MATERIALS

*Curriculums: I, II, V<sub>2</sub>*

*Preparation: 21-3*

*Fourth year, first semester*

*Two hours per week*

A detailed study is made of the methods of manufacturing, properties, and uses of materials used in engineering work; such as iron and steel, lime, cement, concrete, brick, wood and stone. Methods of testing and strength of various materials used by the engineer are also taken up. Each student is required to prepare, and present to the class, a paper on some subject of especial importance, which is assigned by the instructor.

MR. STEARNS.

## SCHOOL OF ENGINEERING

### 16-2 TESTING MATERIALS LABORATORY

*Curriculum: I, V<sub>1</sub>*

*Preparation: 12-3*

*Third year, second semester*

*Two hours per week*

The work is done by the students and includes tests to determine the elongation, reduction of areas, modulus of elasticity, yield point, ultimate compressive strength of metals, such as steel, cast iron, copper and brass; tensile and compressive tests on timber and concrete; tests to determine the deflection, modulus of elasticity, elastic limit, and ultimate transverse strength of steel and wooden beams, subject to transverse loads. Tests are also made on cement mortars to determine the strength of cubes and briquettes at different ages.

PROFESSOR ALVORD.

### 16-3 FOUNDATIONS

*Curriculum: I*

*Preparation: 14-1, 16-1,  
taken concurrently*

*Fourth year, first semester*

*Two hours per week*

The subjects treated are pile formations—including those of timber and concrete—sheet piles, coffer-dams, box and open caissons, pneumatic caissons, pier foundations in open wells, bridge piers, and abutments.

PROFESSOR GEE.

### 16-4 GEOLOGY

*Curriculum: I, V<sub>1</sub>*

*Preparation: — —*

*Third year, first semester*

*Two hours per week*

Earth movements and the various terrestrial applications of solar energy. The more important geological processes, erosion, sedimentation, deformation, and eruption are taken up and discussed. The latter part of the course is devoted to lectures on the broader structural features of the earth's crust and the application of the principles of structural geology to practical engineering problems.

PROFESSOR PUGSLEY.

### 17-1 HIGHWAY ENGINEERING

*Curriculum: I*

*Preparation: 11-2*

*Fourth year, second semester*

*Two hours per week*

The location, construction, and maintenance of roads, street design, and street drainage; sidewalks; pavement foundations; and the construction, cost and maintenance

## PROGRAM OF STUDIES

of the various kinds of roads and pavements, including asphalt, brick, stone-block, wood-block, macadam (both water bound and bituminous), bituminous concrete, hydraulic cement concrete, gravel, and earth. Special consideration is given to the modern concrete road.

PROFESSOR GEE.

### DEPARTMENT OF MECHANICAL ENGINEERING

#### 21-1 APPLIED MECHANICS (STATICS)

*All curriculums*

*Preparation: 022-1, 031-1*

*Second year, first semester*

*Three hours per week*

The topics covered are: forces in equilibrium, parallel forces, stresses in frames and forces in three dimensions. The student is required to solve a large number of problems, and to pass examinations at frequent intervals. It is felt that the student should retain a considerable body of facts about this subject in his mind after graduation; therefore a thorough groundwork of theory is covered.

PROFESSOR BENEDICT,  
MR. STEARNS.

#### 21-2 APPLIED MECHANICS (KINETICS)

*All curriculums*

*Preparation: 21-1*

*Second year, second semester*

*Three hours per week*

A continuation of Applied Mechanics 21-1 covering center of gravity, moment of inertia, radius of gyration, kinematics of harmonic motion and pendulums, and kinetics of translation and rotation.

PROFESSOR BENEDICT,  
MR. STEARNS.

#### 21-3 STRENGTH OF MATERIALS

*Curriculums: I, II, V*

*Preparation: 21-2*

*Third year, both semesters*

*Three hours per week*

The topics covered are: the theory and experimental basis of tension, compression, shear, resilience, modulus of elasticity, bending stresses, the design of beams, moment and shear diagrams, use of tables of standard steel shapes, longitudinal shear and deflection in beams, combined stresses, beams with three supports, columns, the strength of shafts and springs, and principal stresses.

PROFESSOR BENEDICT.

## SCHOOL OF ENGINEERING

### 21-4 STRENGTH OF MATERIALS

*Curriculum: III, IV*  
*Third year, first semester*

*Preparation: 21-1*  
*Three hours per week*

Similar to Strength of Materials 21-3, but more limited in time. The topics omitted are columns, principal stresses, and longitudinal shear and deflection in beams.

PROFESSOR BENEDICT.

### 22-1 GRAPHICAL ANALYSIS

*Curriculum: II, V<sub>2</sub>*  
*Third year, first semester*

*Preparation: 042-4, 044-3, 21-2*  
*Six hours per week*

Many problems which may readily be solved by graphical methods are included here. Valve gear problems are solved by the use of the various diagrams. The kinematical features of various machines are studied by means of velocity and acceleration diagrams.

PROFESSOR FERRETTI.

### 22-2 MACHINE DESIGN

*Curriculum: II, V<sub>2</sub>*  
*Third year, second semester*

*Preparation: 21-3,*  
*taken concurrently*  
*Six hours per week*

An application of the principles studied in Applied Mechanics and Mechanism to the design of machine parts. The problem work of the course consists mainly in the design of a steam boiler as the stresses for such a design are known to a great degree of certainty, and the materials of construction are very reliable.

PROFESSOR FERRETTI.

### 22-3 MACHINE DESIGN

*Curriculum: II, V<sub>2</sub>*  
*Fourth year, both semesters*

*Preparation: 22-2*  
*Six hours per week*

Further practice is given the student in the application of theoretical principles previously studied, and at the same time he becomes familiar with the many practical details which must be considered in design work. The problems taken up in the early part of the course are of a static nature, while the later problems involve dynamical stresses. The prob-

## PROGRAM OF STUDIES

lems vary from year to year, but the following are typical of the designs taken up: hydraulic press, arbor press, hydraulic flanging clamp, crane, air compressor, punch and shear, stone-crusher, etc.

In each design, the constructive details are carefully considered, with special attention to methods of manufacture, provision for wear, lubrication, etc. The work is based on rational rather than empirical methods, the student being required to make all calculations for determining the sizes of the various parts and all necessary working drawings.

PROFESSOR FERRETTI.

### 22-5 MECHANISMS OF MACHINES

*Curriculum: II*

*Preparation: 044-3*

*Third year, second semester*

*Three hours per week*

Designed to supplement the work in pure mechanism as given in course 044-3, by a consideration of the application of mechanisms to actual machines, thereby furnishing the student with a series of practical mechanisms to accomplish definite purposes, and increasing his ability to analyze the action of other machines.

PROFESSOR FERRETTI.

### 23-1 HEAT ENGINEERING

*Curriculums: II, III, V<sub>2</sub>*

*Preparation: 023-2, 033-1*

*Third year, both semesters*

*Three hours per week*

The fundamental principles underlying the subject of thermodynamics. A study is made of the following topics: the properties of perfect gases, saturated and super-heated vapors, air and steam cycles, and the flow of fluids through nozzles, and pipe-lines, and the calculations of an air compressor. In the second half-year the principles of thermodynamics are applied to the various parts of the modern steam power plant. This includes a study of boilers, fuels, and combustion, flue gas analysis, feed-water heaters, chimneys, steam engines, condensers, cooling towers, gas power, steam turbines, and also the methods of testing power plant equipment.

PROFESSOR FERRETTI.

## SCHOOL OF ENGINEERING

### 23-2 ENGINEERING LABORATORY

*Curriculum: III*

*Preparation: 23-1*

*Fourth year, first semester*

*Two hours per week*

A short series of tests and exercises upon the various appliances in use in modern power plants. The students here apply the knowledge they have gained in the class room, making a complete report of the test, including methods of testing and computations.

PROFESSORS FERRETTI AND ZELLER.

### 23-3 HEAT ENGINEERING

*Curriculums: I, IV*

*Preparation: 023-2, 033-1*

*Third year, second semester*

*Three hours per week*

The subject matter of heat engineering is presented to the students of civil and chemical engineering to meet their special needs.

PROFESSOR FERRETTI.

### 23-4 STEAM TURBINES

*Curriculum: II*

*Preparation: 23-1*

*Third year, summer term*

*Five hours per week*

A study of the principles of the flow of fluids, kinetic effects, and thermodynamics with the steam turbine used as a current example. The fundamental differences in the principle of the different types of turbines; the field of application of the steam turbine; and the influence of high vacuum together with the condensing equipment developed for turbine work, are all given careful attention.

PROFESSOR ZELLER.

### 23-5 HEAT ENGINEERING

*Curriculum: II*

*Preparation: 23-1*

*Fourth year, first semester*

*Three hours per week*

A study of the various systems of refrigeration, such as the ammonia absorption and compression machines, constitutes the major portion of the course. A brief study is also made of the principles of heating and ventilation, and of Hirn's analysis of the losses in a steam engine.

PROFESSOR FERRETTI.

## PROGRAM OF STUDIES

### 23-6 ENGINEERING LABORATORY

*Curriculum: II* *Preparation: 23-1*  
*Third year, summer term* *Fifteen hours per week*

Similar to Engineering Laboratory 23-2, but covering the ground more completely than was possible with the limited time available in that course.

PROFESSORS FERRETTI AND ZELLER.

### 24-1 PRODUCTION ENGINEERING

*Curriculums: II, V* *Preparation: — —*  
*First year, first semester* *Two hours per week*

A descriptive course intended to acquaint the student with the organization, methods, and equipment used in industrial plants engaged in quantity production. For purposes of discussion the plant is divided into its various units: such as general offices, drafting-room, pattern-shop, foundry, machine-shop, erecting shop, testing-room, etc. The mechanical equipment, filing systems, cost-keeping systems, "follow-up" cards, etc., are described, and representative examples are shown.

PROFESSOR ZELLER.

### 24-2 PRODUCTION ENGINEERING

*Curriculums: II, V* *Preparation: 24-1*  
*First year, second semester* *Two hours per week*

A continuation of Production Engineering 24-1.

PROFESSOR ZELLER.

### 24-3 POWER PLANT EQUIPMENT

*Curriculum: II* *Preparation: 23-1*  
*Third year, first semester* *taken concurrently*  
*Two hours per week*

Largely a description of the many appliances used in modern power plants. A discussion of boilers and boiler accessories, ash and coal handling systems, the various types of engines—gas engines and turbines—with their valve gears and governing devices, condensers, feed-water heaters, pumps, etc.

PROFESSOR ZELLER.

## SCHOOL OF ENGINEERING

### 24-4 POWER PLANT ENGINEERING

*Curriculum: II, V<sub>2</sub>*

*Preparation: 23-1*

*Fourth year, second semester*

*Three hours per week*

Topics and problems chosen largely from engineering practice selected to convey to the engineering students a firm grasp of fundamental principles and engineering methods of attacking and analyzing problems in power plant, not only from the point of view of scientific theory, but also with due consideration of the limitations imposed by practice and by costs. Efficiency and operation costs of different types of plants such as steam, hydro-electric and Diesel engines are also carefully studied to determine the type of plant best suited for the conditions and location involved.

PROFESSOR ZELLER.

### 24-6 STANDARD ENGINEERING PRODUCTS AND PROCESSES

*Curriculums: II, III*

*Preparation: 16-1*

*Fourth year, second semester*

*Two hours per week*

Intended to familiarize the student with the commercial names and sizes of engineering products: such as, bar and plate stock, shafting, tubing, pipes, valves, bearings and hangers, belts, pulleys, etc. A discussion of such manufacturing processes as extrusion, broaching, press work, electric and oxy-acetylene welding, cold and hot rolling and drawing, etc., is included.

PROFESSOR ZELLER.

### 25-1 INDUSTRIAL PLANTS

*Curriculum: II, V<sub>2</sub>*

*Preparation: 21-3, 24-2*

*Fourth year, first semester*

*Four hours per week*

*second semester*

*Six hours per week*

The principles involved in the erection, installation, and management of an industrial plant. A description of the different types of structures, with consideration of such details as foundations, walls, columns, floors, windows, etc., is followed by a discussion of the installation of the power plant and machinery. Principles of illumination, fire-prevention, heating and ventilation, routing of materials, and the organization and management of a plant are taken up. Design problems are given in connection with the course.

PROFESSOR ZELLER.



## PROGRAM OF STUDIES

### DEPARTMENT OF ELECTRICAL ENGINEERING

#### 30-1 ELEMENTS OF ELECTRICITY

*Curriculums: I, II, IV, V*  
*Second year, first semester*

*Preparation: 022-1, 031-1*  
*Three hours per week*

The foundation for subsequent electrical engineering work for students of Civil, Mechanical, and Chemical Engineering. Emphasis is laid on the fundamental principles, and the subject is developed by elaborating these principles through numerical applications. The topics discussed are, briefly: magnets and magnetism, electrical resistance and Ohm's law, electric work and power, series and parallel circuits, electro-magnetism, electromagnetic induction, magnetic properties of iron, electrolysis and batteries, alternating currents and voltages, inductance, capacitance, and circuits containing resistance, inductance, and capacitance.

MR. PORTER.

#### 30-3 APPLIED ELECTRICITY

*Curriculums: I, II, IV, V*  
*Second year, second semester*

*Preparation: 30-1*  
*Three hours per week*

The object is to fit the student to handle intelligently electrical problems that are likely to come up in connection with his chosen field. The course varies somewhat in content, depending upon the particular branch of engineering which most of the students in the class are studying. In any case, the first period is devoted to a consideration of various direct-current machines and appliances; their characteristics and applications. In the second period alternating-current apparatus is treated in a similar manner.

MR. PORTER.

#### 30-4 APPLIED ELECTRICITY LABORATORY

*Curriculums: I, II, IV, V*  
*Second year, summer term*

*Preparation: 30-3*  
*Twenty-five hours per week*

The characteristics and operation of direct and alternating current machinery, discussed in Course 30-3. The experiments deal with the following: resistance measurement, speed control direct-current motors; voltage control of generators; voltage regulation of direct-current generators; speed regulation of direct-current motors; brake tests of various types of direct and alternating-current motors; measurement of losses and the calculating of the efficiency

## SCHOOL OF ENGINEERING

of motors and generators; alternating current circuits containing resistance, inductance, and capacitance; determination of the characteristics of transformers; various polyphase connections; regulation of alternators; synchronous motor, rotary converter, and induction motor characteristics. A written report is required on each experiment, and especial care is exercised that such reports be correct in manner and in form.

MR. PORTER.

### 31-1 ELEMENTS OF ELECTRICAL ENGINEERING

*Curriculum: III*

*Preparation: — —*

*First year, first semester*

*Two hours per week*

A descriptive discussion of the fundamental principles of electrical practice, combined with an outline of their application in the art. The principal aim is to familiarize the student as soon as possible with those matters with which it is important he should be acquainted, in order that he may from the beginning obtain the most possible from his Engineering Practice.

PROFESSOR SMITH.

### 32-1 ELECTRICAL ENGINEERING I

*Curriculum: III*

*Preparation: 31-1, 40-1*

*First year, second semester*

*Four hours per week*

A study in detail of the electric current, electromotive force and resistance, electrical work and power, electrical circuits, Kirchhoff's laws, primary and secondary batteries, magnetism, electromagnetism, electromagnetic induction, self and mutual inductance, electrostatics, energy stored in the electromagnetic and electrostatic field. The practical units of measurement are discussed, as the several quantities to which they apply are successively reached. The work includes demonstration and simple experimentation arranged to enforce the principles discussed theoretically.

MR. PORTER.

### 32-3 ELECTRICAL ENGINEERING II

*Curriculum: III*

*Preparation: 022-1, 32-1*

*Second year, first semester*

*Three hours per week*

*second semester*

*Four hours per week*

A careful, though more or less descriptive, discussion of the dynamo in general operating both as generator and motor, armature windings, armature reactions and their compen-

## PROGRAM OF STUDIES

sation, commutation, etc., followed by a thorough study of the direct-current machine from the point of design, during the first semester; and, during the second semester, a consideration of the methods of testing for efficiency and performance followed by some examination of the applications of the machines studied, as, parallel operation, three-wire systems, boosters and balancers, special motor applications and control methods.

Much emphasis is placed upon the working out of practical problems, a special weekly period being allowed during the second semester for this purpose and about one hundred problems worked in the class room.

PROFESSOR SMITH.

### 32-4 ELECTRICAL ENGINEERING II, LABORATORY

*Curriculum: III*

*Preparation: 32-3,  
taken concurrently*

*Second year, both semesters*

*Six hours per week*

A carefully-selected series of experiments intended to exemplify qualitatively, and in the clearest manner, the principles developed in the parallel lectures, 32-3. It includes a series of about twenty experiments, of which the following may be mentioned as illustrative of the type of work:

The starting of a shunt motor, and starting devices.

The speed, field, and voltage relations in a separately excited machine.

The heat test of a generator.

The characteristic curves of generators.

The parallel operation of shunt and compound generators.

The three-wire balancer set.

The speed and torque curves of the series motor.

Satisfactory completion of fifteen experiments is the minimum acceptable amount of work.

Since the purpose of the course is in part to develop correct methods of work, it is intended that the whole of the preparatory work, as well as the working up of the data obtained, shall be done in the laboratory under supervision of the instructor, so far as necessary.

MR. PORTER.

## SCHOOL OF ENGINEERING

### 32-6 ELECTRICAL ENGINEERING III, LABORATORY

*Curriculum: III*

*Preparation: 32-4, and 32-7 and  
33-1, taken concurrently*

*Third year, both semesters*

*Six hours per week*

A series of experiments involving the testing of machines; together with experiments intended to elucidate practically the principles developed in the parallel course on alternating currents, 32-7, and also to train the student in the use of the special types of instruments which he will later use in the laboratory work upon alternating current machinery.

Illustrative experiments are:

Stray power tests, Prony brake tests, retardation tests, pumping back tests, regulation tests, heat runs, analysis of losses, etc.

Study of A-C series and parallel circuits, resonant conditions, effect of frequency change on circuit constants, parallel operation of A-C machines, synchronizing and changing load, power factor measurements, power measurement in polyphase circuits, etc.

As the course progresses, the student is thrown more and more upon his own resources; a desired result is stated to him, and he is left to plan out his own methods, settle upon the apparatus needed, solve his precision requirements, calibrate the instruments, if necessary, and finally turn in a detailed report covering all phases of the work from its inception.

PROFESSOR SMITH.

### 32-7 ELECTRICAL ENGINEERING III

*Curriculum: III*

*Preparation: 022-1, 32-3*

*Third year, both semesters*

*Three hours per week*

Lectures, recitations and problem work upon the electro-magnetic and electro-static fields and the theory of alternating currents. The course covers the consideration of the "steady state," both when we have a pure sine wave and when we have a complex wave. Transients are not considered. The subject is developed principally by the aid of vector algebra, and the student is urged to use the methods of complex quantity to the fullest extent.

Application of the principles developed to all possible combinations of resistance, inductive and condensive reactances

## PROGRAM OF STUDIES

in both single and polyphase circuits is given by the working of about two hundred problems involving both analytical and graphical methods.

### 32-8 ELECTRICAL ENGINEERING IV, LABORATORY

*Curriculum: III*

*Preparation: 32-9,  
taken concurrently*

*Fourth year, both semesters*

*Six hours per week*

Laboratory course to accompany Course 32-9 in alternating-current machinery. The work includes tests on the heating, efficiency, and determination of the characteristics of the various types of alternating-current machinery, such as transformers, generators, and motors. A detailed preliminary study is made of each assigned experiment, involving the theoretical principles, the method of procedure to obtain the required results, and the way in which the results should be worked up. This is embodied in a preliminary report. The student then does the necessary laboratory work to obtain the required data; and finally works up the whole into a detailed final report. The assistance given by the instructor is reduced to a minimum, the initiative and resourcefulness of the student being depended on to the greatest extent.

PROFESSOR DURKEE.

### 32-9 ELECTRICAL ENGINEERING IV

*Curriculum: III*

*Preparation: 023-2, 32-7*

*Fourth year, both semesters*

*Four hours per week*

A careful, thorough, and detailed discussion of the construction, theory, operating characteristics, and testing of the various types of alternating current machinery. The first half of the course is equally divided between the transformer and the synchronous generator. In the second half of the course synchronous motors, parallel operation of alternators, synchronous converters, polyphase induction motors, the induction generator, single phase induction motors, and commutating alternating-current motors are taken up. One two-hour period a week is spent in the solution of numerical problems.

PROFESSOR DURKEE.

## SCHOOL OF ENGINEERING

### 33-1 ELECTRICAL MEASUREMENTS

*Curriculum: III*

*Third year, both semesters*

*Preparation: 32-3*

*Two hours per week*

A brief discussion of measurement in general and electrical measurements in particular, in which a review of the electrical units and their definitions has a part. Resistance devices, galvanometers, ammeters, and voltmeters are next discussed, the treatment of other instruments being taken up later in connection with their uses. This is followed by a detailed discussion of the methods of measuring the various electrical quantities—resistance, resistivity, conductivity, current, electromotive force, capacitance, inductance, magnetic induction, permeability, hysteresis loss, energy, and power. The student is given a thorough discussion of the construction, theory of operation, method of use, sources of error, etc., of the types of measuring instruments used in commercial work and in the standardizing laboratory.

PROFESSOR DURKEE.

### 33-2 ELECTRICAL MEASUREMENTS LABORATORY

*Curriculum: III*

*Third year, second semester  
summer term*

*Preparation: 33-1*

*Three hours per week  
Twenty-five hours per week*

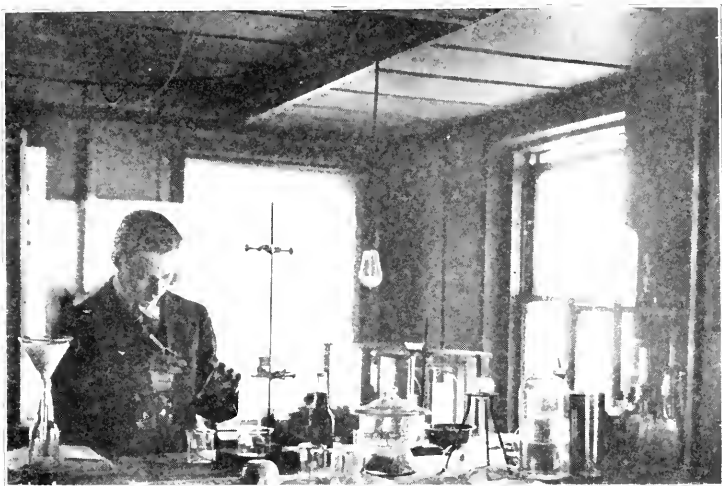
A series of experiments emphasizing the principles developed in Course 33-1. The student becomes familiar with the use of the standard apparatus in use in testing laboratories. Particular stress is laid on the correct use of the apparatus, and precision discussions are required throughout.

The experiments cover such matters as the measurement of resistance by various methods, resistivity, conductivity, electromotive force, current inductance, capacitance, magnetic induction, magnetizing force, hysteresis loss, etc. Work is given in calibrating ammeters, voltmeters and watt-hour meters, in cable testing, magnetic testing, wave form determination, and the use of special apparatus such as the Kelvin bridge, Carey Foster bridge, potentiometer, etc., and secondary laboratory standard instruments.

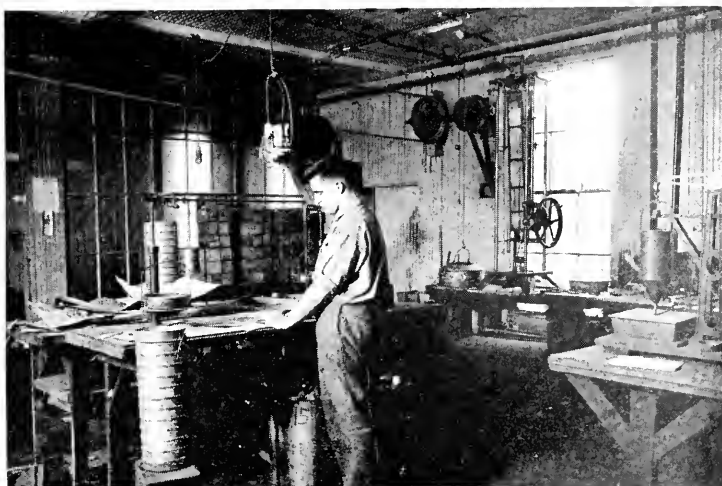
Thorough training in the principles of Precision of Measurements is also given, and applied to each experiment performed.

PROFESSOR DURKEE.

# Chemical Engineering Students



Analyzing Food  
A. B. WERBY LABORATORIES

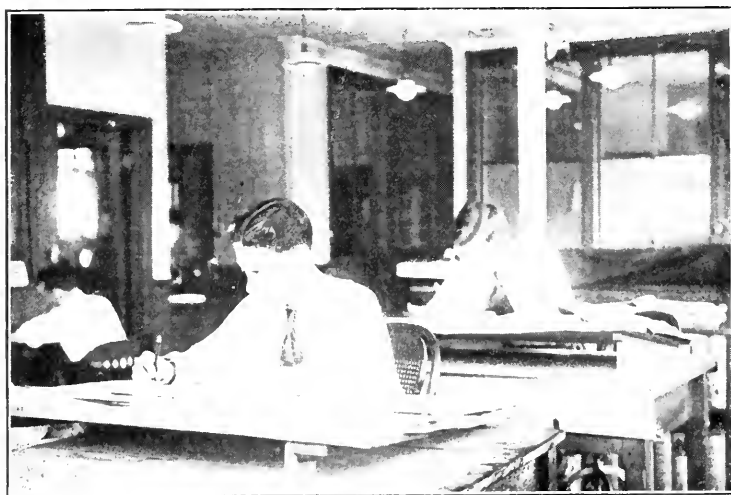


Testing Road Materials  
WARREN BROTHERS—PAVING MATERIALS

# Students Engaged in Engineering Practice



Drafting  
DESIGNING ENGINEER'S OFFICE—B. & A. RAILROAD



Machine Designing  
KINNEY MANUFACTURING COMPANY, BOSTON



## PROGRAM OF STUDIES

### 34-1 ELECTRICAL ENGINEERING V

*Curriculum: III*

*Preparation: 13-2, taken concurrently; 32-7, 32-9, taken concurrently*

*Fourth year, both semesters*

*Four hours per week*

A detailed study of the central station, both steam-driven and hydro-electric, equally careful attention being given to the engineering and economic details, the influence of the various appliances upon the cost of power being kept constantly in view.

Following this comes a careful study of the high tension transmission line, the potentials used, spacing of conductors, line characteristics, losses, inductive effects upon neighboring circuits, quarterwave transmission, surges, etc.

After this is considered the sub-station and equipment, and then follows a full discussion of distribution systems and the utilization of electrical power, especial attention being given to railway operation, and the matter of outdoor and interior illumination. The course closes with a brief discussion of the public utility in its relations to the community served.

PROFESSOR SMITH.

### 35-1 ADVANCED ELECTRICITY

*Curriculum: III*

*Preparation: 32-7*

*Fourth year, both semesters*

*Two hours per week*

This course consists of two parts: first, the matter of electro-magnetic radiation, the propagation of waves in space and along wires, and a detailed discussion of the theory of transients intended to supplement the more practical consideration of transmission lines given in course 34-1.

The latter part of the course is given over to a full descriptive discussion of modern electrical theory. Beginning with the state of electrical science in the time of Franklin, the development of the science is traced through the work of Faraday, Maxwell, Hertz and Kelvin on the one hand; of Weber, Crookes, J. J. Thomson, Millikan, and others on the other. The subjects of metallic, electrolytic, and gaseous conduction are discussed, together with ionization, the theories of electromagnetic mass, and the electrical constitution of matter.

PROFESSOR SMITH.

# SCHOOL OF ENGINEERING

## DEPARTMENT OF CHEMICAL ENGINEERING

### 40-1 INORGANIC CHEMISTRY

*Curriculums: I\*, II, III*

*Preparation: — —*

*First year, first semester*

*Four hours per week*

Inorganic chemistry designed to meet the needs of students in non-chemical courses. A brief discussion of the general principles of chemistry as applied to engineering, with the idea of illustrating the applications of chemistry to special lines of engineering work.

PROFESSOR STRAHAN.  
MR. BAKER.

### 41-1 INORGANIC CHEMISTRY

*Curriculum: IV*

*Preparation: — —*

*First year, both semesters*

*Four hours per week*

The fundamental principles of the science are taught by means of experimental lectures. Topics of a broad general character are taken up in the first part of the subject, in connection with the descriptive chemistry of the non-metallic elements, followed later by more specialized work in connection with the elements. Recitations will include a short written test on the two lectures of the week. Special attention is given to chemical calculations based on practical application.

PROFESSOR STRAHAN,

### 41-2 INORGANIC CHEMISTRY LABORATORY

*Curriculum: IV*

*Preparation: 41-1*

*taken concurrently*

*First year, both semesters*

*Five hours per week*

The object is to cultivate scientific attitude and habit of thought on the part of the student, and to increase his power of acquiring knowledge, whether it be from book, lecture, or from experiment. The experiments are planned to illustrate the topics which have been discussed in the lecture room. Careful manipulations, thoroughness in observation, accuracy in arriving at conclusions, are required of each student. In this, as in all subsequent laboratory work, neat and satisfactory notes will be considered an essential part of the work.

PROFESSOR STRAHAN.  
MR. GREEN.

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\*Third year, second semester.

## PROGRAM OF STUDIES

### 42-1 QUALITATIVE ANALYSIS

*Curriculum: IV*

*First year, summer term*

*Preparation: 41-1, 41-2*

*Ten hours per week*

The course is designed not merely to consider the procedures used in the detection of the common elements, but to deal in a much broader way with the principles involved in chemical analysis and to broaden the student's knowledge of inorganic chemistry, especially the chemistry of the metallic elements. A great deal of time is devoted to the study of the principles of hydrolysis, solubility product, correct concentration, amphoteric substances, and the general laws of solutions. In the latter part of the course the analysis of unusual mixtures will be discussed with especial emphasis on the interpretation of analytical results.

MR. PERKINS.

### 42-2 QUALITATIVE ANALYSIS LABORATORY

*Curriculum: IV*

*First year, summer term*

*Preparation: 42-1*

*taken concurrently*

*Twenty-eight hours per week*

After a series of preliminary experiments illustrating principles and giving opportunity for practice in writing equations, the analysis of unknown substances is undertaken, beginning with solutions and simple salts, and later analyzing minerals, pigments, slags, alloys, and various commercial products, such as boiler compounds, cleaning powders, glass enamels, and similar inorganic substances.

MR. PERKINS.

### 43-1 QUANTITATIVE ANALYSIS

*Curriculum: IV*

*Second year, first semester*

*Preparation: 42-1, 42-2*

*Two hours per week*

The general principles of quantitative analysis. Half of the time is devoted to the consideration of typical methods in gravimetric analysis, such as the determination of chloride in salt, the determination of sulphur in sulphur compounds, the complete analysis of brass, and other analyses involving general principles of procedure. The other half of the time is devoted to the methods of volumetric analysis as illustrated in the use of acid and alkali determinations, oxidation methods involving bichromate, permanganate and iodine, and the

## SCHOOL OF ENGINEERING

methods of volumetric precipitation. Special attention is given to chemical calculations, and the solution of numerous analytical problems is one of the essential features of the course.

MR. PERKINS.

### 43-2 QUANTITATIVE ANALYSIS LABORATORY

*Curriculum: IV*

*Preparation: 43-1  
taken simultaneously*

*Second year, both semesters*

*Five hours per week*

Analytical practice illustrating the methods discussed in Course 43-1. The calibration of burettes, the use and care of analytical balances, and a limited number of typical gravimetric and volumetric analyses are included in the course, in which great stress is laid on the accuracy, care, and integrity necessary for successful quantitative work.

MR. PERKINS.

### 44-1 TECHNICAL ANALYSIS

*Curriculum: IV*

*Preparation: 43-1, 43-2*

*Third year, first semester*

*Three hours per week*

A continuation of course 43-1, dealing more specifically with actual technical or commercial analytical problems. Especial emphasis is placed upon actual methods used in industrial operations. Complete reports covering the history, theory, and actual routine work will be asked for from each student, upon each problem undertaken. In general, the course will include the rapid methods of analysis of steel, the analysis of boiler waters, gases, fuels, oils, paints, varnishes, and similar substances.

MR. PERKINS.

### 44-2 TECHNICAL ANALYSIS LABORATORY

*Curriculum: IV*

*Preparation: 44-1,  
taken concurrently*

*Third year, first semester*

*Five hours per week*

Designed to illustrate by a limited number of analyses the technical methods of quantitative analysis. Problems will be assigned individually, depending on the student's future plans or his inclination, and will be selected from the fields of

## PROGRAM OF STUDIES

steel analysis, gas and fuel analysis, including calorific testing, water analysis. Time is devoted to the study of pigments, soaps, or in general in the analysis of that class of materials in which the student is most interested.

MR. PERKINS.

### 44-3 TECHNICAL ANALYSIS

*Curriculum: IV*

*Preparation: 43-1, 44-1*

*Third year, second semester*

*Two hours per week*

This course is designed to cover in a brief manner the subject of metallography. The metallographic methods of investigation, including preparation of sample, etching, and microscopic examination will be discussed. A discussion of the more common non-ferrous alloys including bearing metals, type metals, solders, and brass will be undertaken by the interpretation of their temperature, composition diagrams and application to the Phase Rule. A portion of the time will also be devoted to the iron-carbon diagram, which will include the metallurgy and metallography of cast iron, malleable iron, carbon steels, and special steels.

MR. PERKINS.

### 45-1 ORGANIC CHEMISTRY

*Curriculum: IV*

*Preparation: 43-1 and 43-2,  
taken concurrently*

*Third year, both semesters*

*Three hours per week*

The underlying principles and theories of organic chemistry, the methods of preparation and characteristic reactions of carbon compounds. The important organic compounds will be considered in detail, because they serve as the most convenient examples for illustrating fundamental principles which elucidate the chemical character of substances which are of practical importance.

PROFESSOR STRAHAN.

### 45-2 ORGANIC CHEMISTRY LABORATORY

*Curriculum: IV*

*Preparation: 45-1,  
taken concurrently*

*Third year, both semesters*

*Five hours per week*

The operations, apparatus, and the laboratory technique involved in organic work, such as fractional distillation, extraction, crystallization, steam distillation, determinations

## SCHOOL OF ENGINEERING

of melting points, boiling points, and the like. It deals also with general methods of preparation, such as etherification, saponification, sulphonation, diazotization, etc. The student will prepare a number of compounds—including nitro-benzene, aniline, ethers, phenols, and other typical organic substances.

PROFESSOR STRAHAN.

### 45-3 ORGANIC CHEMISTRY

*Curriculum: IV*

*Preparation: 45-1*

*Fourth year, both semesters*

*Two hours per week*

A review of Course 45-1 is given, but the subject is studied from a more mature point of view to furnish the student a more thorough survey of the fundamental principles which underlie the modern developments in this branch of chemistry.

Emphasis is placed on the effect of the nature of organic radicals on the properties of the compounds containing them, the effect of unsaturation, and the influence of structure and substituents on the activity of groups and the laws of substitution.

Industrially important compounds are treated more at length than those of a more purely scientific use and of interest to the advanced students only.

During the latter part of the course outside reading will be assigned in the scientific journals, followed by reports and discussions.

PROFESSOR STRAHAN.

### 45-4 ORGANIC CHEMISTRY LABORATORY

*Curriculum: IV*

*Preparation: 45-3*

*taken concurrently*

*Fourth year, both semesters*

*Five hours per week*

Preparations and reactions of the typical organic substances, including the methods of separation and identification of simple mixtures. The instruction also includes a study of the qualitative tests for the important groups occurring in organic compounds, together with the other physical data which would give valuable information as to the nature of the compound under examination.

## PROGRAM OF STUDIES

The student is given several unknown pure compounds and mixtures to analyze which trains him to use his head as well as the information supplied in his text-books.

PROFESSOR STRAHAN.

### 46-2 CHEMICAL ENGINEERING

*Curriculum: IV*

*Preparation: — —*

*Third year, second semester*

*Two hours per week*

The study of basic principles such as the Law of Conservation of Elements, the Law of Conservation of Energy, and the Stoichiometrical Relationships of Solids and Gases. It is desired by the correlation of theoretical principles in the form of industrial plant problems to enlarge the viewpoint of the student and prepare him for Course 46-3.

MR. BAKER.

### 46-3 CHEMICAL ENGINEERING

*Curriculum: IV*

*Preparation: 46-2*

*Fourth year, both semesters*

*Three hours per week*

A continuation of the study of the principles underlying the mechanical operations involved in chemical industries, together with a study of the apparatus used to perform these operations. The subjects of crushing and grinding, separation, flow of heat, flow of fluids, evaporation, distillation, and drying, are considered in detail, accompanied by the solution of typical problems of a chemical engineering nature.

MR. BAKER.

### 47-1 INDUSTRIAL CHEMISTRY

*Curriculum: IV*

*Preparation: 44-1, 45-2*

*Fourth year, first semester*

*Three hours per week*

*second semester*

*Two hours per week*

The more important industrial processes are studied with a view to the general chemistry involved and to the various types of apparatus necessary to carry out the chemical reactions. The student is given a broad survey of the field of chemical industry and a knowledge of the relationships of the different industries to one another. The industries studied include the production of acids, alkali, fertilizers, glass, pigments, cements, soap, explosives, paper, petroleum, illuminating gas, and other general chemicals.

MR. BAKER.

## SCHOOL OF ENGINEERING

### 47-2 INDUSTRIAL CHEMISTRY LABORATORY

*Curriculum: IV*

*Preparation: 47-1,  
taken concurrently*

*Fourth year, both semesters*

*Four hours per week*

The quantitative study of the preparation and purification of a small number of chemical products, selected as types of reactions of industrial importance. The processes employed are carefully controlled, and the final products are analyzed to determine their purity. When the work is completed, a careful detailed report of each process is made and discussed in class.

MR. BAKER.

### 48-1 PHYSICAL CHEMISTRY

*Curriculum: IV*

*Preparation: 42-1, 43-1, 44-1*

*Fourth year, both semesters*

*Four hours per week*

The more important principles of Theoretical Chemistry are treated with great thoroughness and are illustrated by applying them to a large number of problems. During the course the following subjects are considered: derivation of molecular and atomic weights, derivation of formulae, properties of substances in the gaseous state, laws of solution, solutions of ionized substances, equilibrium of homogeneous systems, kinetics of reactions, phase rule diagrams, and thermochemistry.

MR. PERKINS.

## DEPARTMENT OF ADMINISTRATIVE ENGINEERING

### 50-1 INDUSTRIAL ORGANIZATION

*Curriculum: V*

*Preparation: — —*

*Third year, first semester*

*Two hours per week*

This course takes up the types of business organization, including the individual enterprise, the partnership, the corporation, the joint stock company, and the legal trust. A study is made of the advantages of combinations and the effect of legal regulations.

PROFESSOR BENEDICT.



## PROGRAM OF STUDIES

### 50-2 INDUSTRIAL FINANCE

*Curriculum: V*

*Preparation: 50-1*

*Third year, second semester*

*Two hours per week*

A continuation of Industrial Organization 50-1, with the addition of problems of promotion, underwriting, and general financing, common to all types of business.

PROFESSOR BENEDICT.

### 50-3 CORPORATIONS

*Curriculum: V*

*Preparation: 50-2*

*Third year, summer term*

*Five hours per week*

Several particular cases of large corporations are taken up from the financial standpoint of their success, or of their failure and reorganization.

### 50-4 BUSINESS MANAGEMENT

*Curriculum: V*

*Preparation: 50-2*

*Fourth year, first semester*

*Three hours per week*

The course consists of discussions and problems in physical arrangements of manufacturing plants and office management as related to production.

### 50-5 MARKETING

*Curriculum: V*

*Preparation: — —*

*Fourth year, first semester*

*Three hours per week*

This subject treats of market and trade channels, territorial divisions, the selection, training, and equipment of salesmen, advertising and publicity work, and other problems of selling the manufactured product.

### 50-6 BUSINESS ADMINISTRATION

*Curriculum: V*

*Preparation: 50-4*

*Fourth year, second semester*

*Three hours per week*

A study of the operation of manufacturing enterprises for profit. The details of the manufacturing departments, including time study and rate setting, together with related functions of employment, stores control, and shipping are taken up in detail.

## SCHOOL OF ENGINEERING

### 51-1 PRINCIPLES OF ACCOUNTING

*Curriculum: V*

*Preparation: — —*

*Third year, first semester*

*Three hours per week*

The intention is not to train the student to be a professional bookkeeper or auditor, but to promote an understanding of financial reports. Problems are given in double-entry book-keeping, debits and credits, balance sheets, and profit and loss statements.

MR. GOODRIDGE.

### 51-2 COST ACCOUNTING

*Curriculum: V*

*Preparation: 51-1*

*Third year, summer term*

*Ten hours per week*

The student is made familiar with the chief principles relating to the design of cost systems for manufacturing concerns, the distribution of overhead expense, and the various methods of following the cost of labor and materials on individual items of production.

### 52-1 BANKING AND SECURITIES

*Curriculum: V*

*Preparation: — —*

*Third year, second semester*

*Three hours per week*

Some of the topics considered are: national banks, trust companies, savings banks, clearing houses, loans, the money market, foreign exchange, securities, the construction of bond tables, sinking fund calculations, stock and produce exchanges.

MR. GOODRIDGE.

### 53-1 BUSINESS LAW

*Curriculum: V*

*Preparation: — —*

*Fourth year, second semester*

*Two hours per week*

The course consists of a general treatment of law and its application to business, considering in particular the laws governing contracts, agency and negotiable instruments.

# COURSES OF INSTRUCTION

No.	SUBJECT	Credit Hours	Curriculum	Year
010-1	English .....	50	All	1
011-1	German .....	20	IV	2
011-2	German .....	20	IV	3
012-1	History of Science .....	15	I, II, III, V	3
013-1	Government .....	20	All	3
014-1	Economics .....	20	All	3
020-1	College Algebra .....	30	All	1
021-1	Trigonometry .....	35	All	1
022-1	Analytic Geometry .....	40	All	1
023-1	Differential Calculus .....	35	All	2
023-2	Integral Calculus .....	35	All	2
030-1	Physics .....	10	All	1
031-1	Physics .....	35	All	1
032-1	Light .....	30	All	2
033-1	Heat .....	30	All	2
034-1	Physics Laboratory .....	10	All	1
034-2	Physics Laboratory .....	10	All	2
034-3	Physics Laboratory .....	10	All	2
041-1	Mechanical Drawing .....	25	All	1
041-2	Mechanical Drawing .....	20	I, IV	1
041-3	Mechanical Drawing .....	40	II, III, V	1
042-3	Machine Drawing .....	30	II, V	2
042-5	Engineering Drawing .....	40	I, III*, IV	3
043-1	Descriptive Geometry .....	30	I, II, III, V	1
044-2	Mechanism .....	25	II, V	2
044-3	Mechanism .....	55	II, V	2
050-1	Engineering Conference .....	60	All	2, 3, 4
052-1	Thesis .....	30	All	4
060-1	Physical Training .....	20	All	1
11-1	Surveying .....	35	I	1
11-2	Surveying .....	35	I	1
11-3	Surveying, Field and Practice .....	25	I	1
11-4	Surveying, Field and Practice .....	25	I	1
11-5	Surveying .....	30	I	2
11-6	Surveying, Field and Practice .....	25	I	2
11-7	Surveying .....	35	V	1
11-8	Topographical Drawing .....	15	I, V <sub>1</sub>	3
12-1	Railroad Surveying .....	30	I	2
12-2	Railroad Surveying, Field and Practice .....	25	I	2
12-3	Railroad Engineering .....	30	I	3
12-4	Railroad Engineering, Field and Practice .....	30	I	3
13-1	Hydraulics .....	30	I, II, V <sub>1</sub>	3
13-2	Hydraulic Motors .....	30	II, III*	3, 4*
13-3	Hydraulics .....	30	III, IV, V <sub>2</sub> *	3, 4*
14-1	Theory of Structures .....	40	I, V <sub>1</sub>	3
14-2	Structural Drawing .....	25	I, V <sub>1</sub>	3
14-3	Engineering Structures .....	65	I, V <sub>1</sub>	4
14-4	Structural Design .....	40	I, V <sub>1</sub>	4
15-1	Concrete .....	35	I, II	4
15-2	Concrete Design .....	25	I, II	4
16-1	Materials .....	20	I, II, V <sub>2</sub>	4
16-2	Testing Materials Laboratory .....	20	I, V <sub>1</sub>	3
16-3	Foundations .....	20	I	4
16-4	Geology .....	20	I, V <sub>1</sub>	3
17-1	Highway Engineering .....	20	I	4
21-1	Applied Mechanics .....	30	All	2
21-2	Applied Mechanics .....	30	All	2
21-3	Strength of Materials .....	70	I, II, V	3
21-4	Strength of Materials .....	35	III, IV	3
22-1	Graphical Analysis .....	45	II, V <sub>2</sub>	3
22-2	Machine Design .....	45	II, V <sub>2</sub>	3
22-3	Machine Design .....	80	II, V <sub>2</sub>	4
22-5	Mechanisms of Machines .....	30	II	3
23-1	Heat Engineering .....	60	II, III, V <sub>2</sub>	3
23-2	Engineering Laboratory .....	20	III	4

\* Curriculum and year as indicated.

# SCHOOL OF ENGINEERING

No.	SUBJECT	Credit Hours	Curriculum	Year
23-3	Heat Engineering	30	I, IV	3
23-4	Steam Turbines	15	II	3
23-5	Heat Engineering	30	II	4
23-6	Engineering Laboratory	20	II	3
24-1	Production Engineering	35	II, V	1
24-2	Production Engineering	35	II, V	1
24-3	Power Plant Equipment	35	II	3
24-4	Power Plant Engineering	35	II, V <sub>2</sub>	4
24-6	Standard Eng. Products and Processes	20	II, III	4
25-1	Industrial Plants	90	II, V <sub>2</sub>	4
30-1	Elements of Electricity	30	I, II, IV, V	2
30-3	Applied Electricity	30	I, II, IV, V	2
30-4	Applied Electricity Laboratory	40	I, II, IV, V	2
31-1	Elements of Electrical Engineering	30	III	1
32-1	Electrical Engineering I	40	III	1
32-3	Electrical Engineering II	90	III	2
32-4	Electrical Engineering II, Laboratory	80	III	2
32-6	Electrical Engineering III, Laboratory	60	III	3
32-7	Electrical Engineering III	90	III	3
32-8	Electrical Engineering IV, Laboratory	90	III	4
32-9	Electrical Engineering IV	90	III	4
33-1	Electrical Measurements	60	III	3
33-2	Electrical Measurements Laboratory	20	III	3
34-1	Electrical Engineering V	90	III	4
35-1	Advanced Electricity	30	III	4
40-1	Inorganic Chemistry	30	I*, II, III	1, 3*
41-1	Inorganic Chemistry	60	IV	1
41-2	Inorganic Chemistry Laboratory	40	IV	1
42-1	Qualitative Analysis	35	IV	1
42-2	Qualitative Analysis Laboratory	30	IV	1
43-1	Quantitative Analysis	40	IV	2
43-2	Quantitative Analysis Laboratory	50	IV	2
44-1	Technical Analysis	30	IV	3
44-2	Technical Analysis Laboratory	25	IV	3
44-3	Technical Analysis	30	IV	3
45-1	Organic Chemistry	70	IV	3
45-2	Organic Chemistry Laboratory	50	IV	3
45-3	Organic Chemistry	70	IV	4
45-4	Organic Chemistry Laboratory	60	IV	4
46-2	Chemical Engineering	30	IV	3
46-3	Chemical Engineering	70	IV	4
47-1	Industrial Chemistry	70	IV	4
47-2	Industrial Chemistry Laboratory	40	IV	4
48-1	Physical Chemistry	80	IV	4
50-1	Industrial Organization	25	V	3
50-2	Industrial Finance	25	V	3
50-3	Corporations	15	V	3
50-4	Business Management	50	V	4
50-5	Marketing	50	V	4
50-6	Business Administration	50	V	4
51-1	Principles of Accounting	35	V	3
51-2	Cost accounting	25	V	3
52-1	Banking and Securities	35	V	3
53-1	Business Law	35	V	4

\* Curriculum and year as indicated.

# THESES

## Class of 1921

- ABRAMSON, SAMUEL *Chemical Engineering*  
Revivification of Fuller's Earth by a Decolorization Method.
- ABROMSON, HARRY PHILIP (with O. Abromson) *Chemical Engineering*  
Design of a Plant for the Salem Gas Light Company for Producing Creosoting Oil.
- ABROMSON, ONNE (with H. P. Abromson) *Chemical Engineering*  
Design of a Plant for the Salem Gas Light Company for Producing Creosoting Oil.
- ALBERTS, SAMUEL (with C. E. Hills) *Electrical Engineering*  
Separation of Iron Losses in a Transformer.
- ATKINSON, RALPH *Chemical Engineering*  
Humidity Equilibrium of Common Substances.
- BROWN, MARTIN *Mechanical Engineering*  
The Arrangement of a Series of Engineering Laboratory Experiments for the Students of Northeastern College.
- CATES, LOUIS G. (with S. Levine) *Civil Engineering*  
Design of a Viaduct (Part of Plans of Boston Elevated Railway Extension, Dorchester, Mass.)
- CHENEY, NORMAN (with C. E. Mead) *Mechanical Engineering*  
Efficiency Tests of an Indian Motorcycle Engine.
- CLEMENTS, GEORGE (with R. Spear) *Civil Engineering*  
An Investigation of Dangerous Conditions Existing at Great Head, Winthrop, Mass., with Plans and Designs for the Solution of the Problem.
- COOPER, R. DUNHAM *Mechanical Engineering*  
A Study of the Power Plant of a Ship.
- CRAMER, GEORGE W. (with W. C. Richards) *Civil Engineering*  
Investigation of an Impounding Reservoir.
- CUNDARI, FRANK A. *Civil Engineering*  
Design of a Through Plate Girder Bridge on the Midland Division of the N. Y., N. H. and H. R. R. at Southampton Street, Boston.
- DOANE, KENDRICK P. (with H. M. Wilkins) *Civil Engineering*  
Reinforced Concrete Arch Highway Bridge for Proposed Road over Muddy River in the Back Bay Fens, Boston, Mass.
- FEARING, EDWARD W. (with F. H. LaBree) *Electrical Engineering*  
The Investigation of Electrical Grounds.
- GINDER, CHESTER J. *Civil Engineering*  
Design of Reinforced Concrete Garage to be Located Corner of Huntington Avenue and Greenleaf Streets, Boston.
- GORDON, MORRIS J. *Chemical Engineering*  
An Electrolytic Method of Determining Arsenic Quantitatively.
- HEAP, SHELDON I. *Electrical Engineering*  
An Investigation of a Counterpoise as used in Amateur Radio Telegraphy.
- HILLS, CHARLES E., JR. (with S. Alberts) *Electrical Engineering*  
Separation of Iron Losses in a Transformer.
- HOWE, MYRON A. (with G. F. Perry) *Civil Engineering*  
Design of Through Riveted Highway Bridge Over Sebethe River Between Towns of Middletown and Cromwell, Conn.
- KEITH, JAMES B. *Chemical Engineering*  
A Study of the Complex Amonic—Cobalt Salts and the Preparation of a Roseo—Cobaltic Chloride.

## SCHOOL OF ENGINEERING

- LABREE, FRANK H. (with E. W. Fearing) *Electrical Engineering*  
The Investigation of Electrical Grounds.
- LANDRY, HERBERT A. (with V. R. Peterson) *Mechanical Engineering*  
The Design of a 250-pound Household Refrigeration Unit.
- LATANZI, ALFRED *Civil Engineering*  
Design of a Mill Building.
- LEVINE, SAMUEL (with L. G. Gates) *Civil Engineering*  
Design of a Viaduct (Part of Plans of Boston Elevated Railway Extension, Dorchester, Mass.
- MARSH, CHARLES C. *Electrical Engineering*  
Distribution of Voltage Around the Commutator of a Given Machine.
- MEADE, CARL E. (with N. E. Cheney) *Mechanical Engineering*  
Efficiency Tests of an Indian Motorcycle Engine.
- NICKERSON, CLARENCE W. *Mechanical Engineering*  
Principles of Scientific Management, designed to increase the Efficiency of the Sanborn Company of Boston, Mass., Manufacturers of Scientific Instruments.
- PETERSON, VERNON R. (with H. A. Landry) *Mechanical Engineering*  
The Design of a 250-pound Household Refrigeration Unit.
- PERRY, GILBERT F. (with M. A. Howe) *Civil Engineering*  
Design of a Through Riveted Highway Bridge Over Sebethe River Between Towns of Middletown and Cromwell, Conn.
- PHIPPS, CHESTER D. *Mechanical Engineering*  
The Constant-Volume-During-Firing Internal Combustion Engine.
- PRIVES, HYMAN S. *Chemical Engineering*  
The Determination of Ammonia, Pyridine, Pyrrole, and Quinoline in Bone Oil.
- RICHARDS, WALTER C. (with G. W. Cramer) *Civil Engineering*  
Investigation of an Impounding Reservoir.
- SANTIS, JULIUS C. *Chemical Engineering*  
The Manufacture of White Lead by Electrolysis.
- SPEAR, ROGER (with G. Clements) *Civil Engineering*  
An Investigation of Dangerous Conditions Existing at Great Head, Winthrop, Mass., with Plans and Designs for the Solution of the Problem.
- STANDLEY, DAVID (with M. Staples) *Civil Engineering*  
Design of a Reinforced Concrete Coal Trestle.
- STAPLES, MERTON (with D. Standley) *Civil Engineering*  
Design of a Reinforced Concrete Coal Trestle.
- SULLIVAN, JOHN J. *Electrical Engineering*  
The Design of a Hydro Electric Power Plant.
- WERTH, LLOYD L. *Mechanical Engineering*  
Design and Construction of a Toric Lens Polishing Machine.
- WILKINS, HENRY M. (with K. P. Doane) *Civil Engineering*  
Reinforced Concrete Arch Highway Bridge for Proposed Road Over Muddy River in the Back Bay Fens, Boston, Mass.

## REGISTER OF STUDENTS

### Enrolled During the School Year 1922-1923

NAME	DEPARTMENT	YEAR	HOME ADDRESS
Abramovitz, Julius	C. E.	1925	<i>Malden</i>
Aimo, Karl H.	C. E.	1923	<i>Allston</i>
Ainsleigh, Charles W., Jr.	A. E.	1925	<i>Atlantic</i>
Alden, Edgar O.	E. E.	1925	<i>East Saugus</i>
Alderman, Leon D.	M. E.	1924	<i>Beverly</i>
Alexander, William T.	A. E.	1925	<i>No. Harpswell, Me.</i>
Allan, Charles R.	M. E.	1923	<i>Pittsfield</i>
Allan, William W.	C. E.	1924	<i>Jamaica Plain</i>
Allen, Earle C.	C. E.	1922	<i>Holbrook</i>
Almoin, Nerses A.	Ch. E.	1925	<i>Newburyport</i>
Alpers, Moses	Ch. E.	1925	<i>Salem</i>
Alves, John J.	M. E.	1922	<i>Provincetown</i>
Anderson, Arthur C.	M. E.	1925	<i>Weymouth</i>
Anderson, Carl R.	M. E.	1925	<i>Orange</i>
Anderson, E. Allen	Ch. E.	1924	<i>Norwood</i>
Anderson, Henry G.	M. E.	1924	<i>West Roxbury</i>
Anderson, Oscar W.	A. E.	1925	<i>Hyde Park</i>
Andrew, Phillip J.	E. E.	1925	<i>Ayer</i>
Anthony, Sidney S.	C. E.	1925	<i>Manchester, N. H.</i>
Arata, Claude J.	E. E.	1923	<i>Hallowell, Me.</i>
Ash, Clarence, D.	Ch. E.	1925	<i>Somerville</i>
Auld, Eugene G.	Ch. E.	1925	<i>Everett</i>
Ayer, Raymond B.	E. E.	1925	<i>Plainville</i>
Baader, Albert S.	E. E.	1924	<i>Everett</i>
Bacon, Robert E.	E. E.	1925	<i>Nobscot</i>
Bailey, Arthur H.	M. E.	1924	<i>Brookfield</i>
Bailey, Louis M.	E. E.	1923	<i>South Duxbury</i>
Bailey, Percy W.	E. E.	1922	<i>Kingston</i>
Baker, Charles G.	E. E.	1924	<i>Georgetown</i>
Baker, John M., Jr.	C. E.	1925	<i>Swampscott</i>
Baker, William F.	E. E.	1924	<i>Charlestown</i>
Baldi, Hugo A.	C. E.	1925	<i>Everett</i>
Ballou, George D.	C. E.	1922	<i>Boston</i>
Baratta, Edmund A.	C. E.	1925	<i>Everett</i>
Barber, Dana H.	M. E.	1924	<i>Newton</i>
Barker, Edward H.	E. E.	1925	<i>East Bridgewater</i>
Barnett, Stewart K.	C. E.	1925	<i>East Douglas</i>
Barney, Kenneth M.	E. E.	1924	<i>Dorchester</i>
Barrett, Roger N.	E. E.	1924	<i>Marlboro</i>
Barry, John J.	E. E.	1924	<i>Salem</i>
Barry, Thomas H.	A. E.	1925	<i>Salem</i>
Bartlett, Charles H.	C. E.	1925	<i>Roslindale</i>
Bartlett, James H., Jr.	C. E.	1924	<i>Quincy</i>
Bartlett, Lothrop B.	Ch. E.	1925	<i>East Walpole</i>
Barton, Kenneth L.	A. E.	1925	<i>Meriden, N. H.</i>
Baruffaldi, Lawrence	C. E.	1925	<i>Somerville</i>
Batchelder, Raymond	E. E.	1925	<i>Manchester, N. H.</i>
Bates, Charles Laurance	E. E.	1925	<i>Whitman</i>
Bates, Kimball S.	E. E.	1924	<i>Huntington</i>

# SCHOOL OF ENGINEERING

NAME	DEPARTMENT	YEAR	HOME ADDRESS
Beard, Weldon N.	E. E.	1925	<i>Melrose Highlands</i>
Bearse, Allen H., Jr.	A. E.	1925	<i>Melrose</i>
Bearse, Richard C.	Ch. E.	1923	<i>Springfield</i>
Beattie, Robert	M. E.	1924	<i>Everett</i>
Becker, Abraham A.	Ch. E.	1923	<i>Cambridge</i>
Bell, Holton C.	M. E.	1925	<i>Beverly</i>
Bender, Albert V.	E. E.	1925	<i>Dorchester</i>
Benson, Gordon E.	E. E.	1925	<i>Upton</i>
Benson, Raymond H.	M. E.	1924	<i>Athol</i>
Berlyn, Lewis	E. E.	1923	<i>Salem</i>
Berman, Benjamin J.	Ch. E.	1925	<i>Quincy</i>
Berman, Harold A.	E. E.	1925	<i>Roxbury</i>
Berman, Isidor	Ch. E.	1925	<i>Lexington</i>
Berquist, John W.	Ch. E.	1925	<i>Arlington</i>
Berry, Earl R.	E. E.	1925	<i>Worcester</i>
Bertini, George E.	C. E.	1925	<i>Everett</i>
Besson, Ralph E.	M. E.	1923	<i>Lynn</i>
Bezanson, Irving E.	A. E.	1925	<i>Milton</i>
Bigelow, Cecil H.	M. E.	1923	<i>Monument Beach</i>
Bigelow, Maurice H.	Ch. E.	1924	<i>Concord</i>
Bikofsky, Isidor	A. E.	1925	<i>Boston</i>
Bingham, Lloyd A.	E. E.	1924	<i>Middlebury, Vt.</i>
Birch, William T. A.	E. E.	1925	<i>Gray, Me.</i>
Bissett, John E.	E. E.	1925	<i>Quincy</i>
Blair, Laurence C.	C. E.	1925	<i>Petersham</i>
Blake, Howard J.	Ch. E.	1924	<i>Boston</i>
Bliss, Theodore B.	Ch. E.	1923	<i>Jamaica Plain</i>
Blodgett, Newton K.	E. E.	1925	<i>Canaan, Vt.</i>
Blumer, Edwin F.	A. E.	1924	<i>Brookfield</i>
Bodemer, Philip E.	C. E.	1924	<i>Cambridge</i>
Boden, Arthur T.	E. E.	1923	<i>Beverly</i>
Bonazzoli, August G.	Ch. E.	1925	<i>Bolton</i>
Boothroyd, Edwin	E. E.	1925	<i>Fall River</i>
Bouchard, George H.	Ch. E.	1924	<i>Topsfield</i>
Boyd, Ronald A.	E. E.	1924	<i>Taunton</i>
Boyd, Thomas P.	M. E.	1922	<i>Chelsea</i>
Bradbury, Rolfe C.	Ch. E.	1925	<i>Cliftondale</i>
Bradbury, Raymond J.	M. E.	1922	<i>New Britain, Conn.</i>
Bradford, Cecil B.	M. E.	1924	<i>Plainfield, Conn.</i>
Bradshaw, Alfred O.	C. E.	1924	<i>Amesbury</i>
Bradstreet, Raymond,	Ch. E.	1923	<i>Middleton</i>
Braica, Anthony A.	C. E.	1925	<i>Springfield</i>
Bramble, James L.	Ch. E.	1925	<i>Pittsfield</i>
Brask, Henry *	C. E.	1923	<i>Attleboro</i>
Bray, Wesley R.	C. E.	1925	<i>Torrington, Conn.</i>
Breen, John J.	Ch. E.	1924	<i>Rockport</i>
Brennan, James F.	M. E.	1923	<i>Salem</i>
Bresson, Jules G.	C. E.	1925	<i>Torrington, Conn.</i>
Brewer, Arthur	M. E.	1924	<i>Bar Harbor, Me.</i>
Britchky, Hyman	Ch. E.	1922	<i>Foxboro</i>
Broadley, William A.	E. E.	1925	<i>East Walpole</i>
Brooks, Curtis C.	M. E.	1924	<i>North Hanover</i>
Brooks, Francis W.	M. E.	1922	<i>Belmont</i>



# REGISTER OF STUDENTS

NAME	DEPARTMENT	YEAR	HOME ADDRESS
Brooks, John S.	M. E.	1924	<i>North Hanover</i>
Brown, Alfred	Ch. E.	1924	<i>Everett</i>
Brown, Bernard C.	C. E.	1924	<i>Georgetown</i>
Brown, Earl L.	C. E.	1925	<i>Sanford, Me.</i>
Brown, Gilbert M.	A. E.	1925	<i>Amherst</i>
Brown, James G.	M. E.	1924	<i>Wakefield</i>
Brown, Ralph E.	E. E.	1922	<i>Rockland</i>
Brown, Richard B.	E. E.	1922	<i>Plymouth</i>
Brown, Walter C.	E. E.	1925	<i>Dorchester</i>
Bruce, Alfred G.	E. E.	1925	<i>Belfast, Me.</i>
Bruce, Herbert A.	C. E.	1925	<i>Watertown</i>
Bryant, Everett H.	E. E.	1925	<i>E. Templeton</i>
Buck, Harold A.	C. E.	1925	<i>Springfield</i>
Bullard, Edmund H.	E. E.	1925	<i>Medfield</i>
Burbeck, Stanley O.	M. E.	1924	<i>Woodsville, N. H.</i>
Burke, George L.	C. E.	1924	<i>Norwood</i>
Burke, Walter F.	A. E.	1925	<i>Dorchester</i>
Burns, Rolfe W.	C. E.	1924	<i>Erie, Pa.</i>
Bushnell, Laverne	A. E.	1923	<i>Dedham</i>
Butterworth, Percy T.	E. E.	1923	<i>Boston</i>
Campbell, Malcolm K.	C. E.	1925	<i>Somerville</i>
Campbell, Oscar J.	M. E.	1924	<i>Hudson, N. H.</i>
Carl, James W.	M. E.	1922	<i>Cambridge</i>
Carlsen, Fred H.	E. E.	1922	<i>Gloucester</i>
Carroll, Frank J.	E. E.	1925	<i>Taunton</i>
Carroll, Francis R.	Ch. E.	1923	<i>Cambridge</i>
Carson, Forest A.	E. E.	1925	<i>Waltham</i>
Carswell, Atlee	A. E.	1925	<i>Manchester</i>
Caswell, Orville G.	M. E.	1923	<i>East Lynn</i>
Chandler, Henry W.	E. E.	1925	<i>Nahant</i>
Chapman, Allen E.	E. E.	1924	<i>Stoneham</i>
Chase, Charles S.	E. E.	1922	<i>Leicester</i>
Chase, Fred W., Jr.	C. E.	1924	<i>Newburyport</i>
Chauvey, Alfred A.	E. E.	1925	<i>Norwood</i>
Chilson, Warren A.	Ch. E.	1924	<i>Milford</i>
Chouinard, Louis	C. E.	1924	<i>Thompsonville, Conn.</i>
Christenson, Edward R.	C. E.	1925	<i>Lee</i>
Clark, Charles H.	M. E.	1925	<i>Medfield</i>
Clark, Raymond F.	E. E.	1925	<i>North Abington</i>
Clark, William M.	M. E.	1925	<i>Hanover</i>
Clarke, Harry J.	E. E.	1925	<i>Wallingford, Conn.</i>
Clarke, Kenneth O.	E. E.	1922	<i>Kingston</i>
Clarke, Robert H.	M. E.	1923	<i>Melrose Highlands</i>
Clarke, William R.	E. E.	1924	<i>Wallingford, Conn.</i>
Cleaves, Royden F.	M. E.	1924	<i>Rochester, N. H.</i>
Cleaves, Wynne P.	Ch. E.	1924	<i>Waltham</i>
Clement, John D., Jr.	E. E.	1925	<i>Waltham</i>
Clerke, Philip N.	E. E.	1925	<i>Lynn</i>
Cobb, Norman E.	M. E.	1925	<i>Calais, Me.</i>
Cobban, John D.	M. E.	1924	<i>Groveland</i>
Coburn, Wendell F.	Ch. E.	1924	<i>Braintree</i>
Coffin, Charles C.	M. E.	1924	<i>Nantucket</i>
Colbert, John A.	C. E.	1924	<i>Somerville</i>

# SCHOOL OF ENGINEERING

NAME	DEPARTMENT	YEAR	HOME ADDRESS
Colburn, Hardy R.	M. E.	1924	<i>Boston</i>
Cole, Donald G.	E. E.	1925	<i>Windsor, Vt.</i>
Collins, Desmond M.	M. E.	1922	<i>Dorchester</i>
Colpitts, Aubrey K.	M. E.	1925	<i>Alma, N. B., Canada</i>
Comfort, Robert F.	A. E.	1925	<i>Winchester</i>
Connell, John H.	Ch. E.	1923	<i>Roxbury</i>
Connor, Wilbert H.	C. E.	1925	<i>Orient Heights</i>
Cook, Bernard L.	E. E.	1925	<i>Medford</i>
Cook, Hiram J.	M. E.	1923	<i>Franklin</i>
Cook, Harold S.	C. E.	1922	<i>Boston</i>
Cooke, Howard W.	E. E.	1922	<i>Athol</i>
Cooke, Joseph W.	E. E.	1925	<i>Goshen, Conn.</i>
Coombs, Seldon P.	M. E.	1922	<i>Medford</i>
Cooper, Charles S.	C. E.	1924	<i>Dorchester</i>
Cooper, George I.	Ch. E.	1924	<i>Dorchester</i>
Copeland, George R.	A. E.	1925	<i>Somerville</i>
Corliss, Theodore A.	A. E.	1925	<i>Somerville</i>
Corsano, Nicholas A.	A. E.	1925	<i>East Boston</i>
Courlang, Maurice	E. E.	1925	<i>Boston</i>
Cox, Allan N.	Ch. E.	1924	<i>Wellesley</i>
Crafts, Harold W.	E. E.	1924	<i>Ashfield</i>
Cragin, Donald G.	A. E.	1925	<i>Framingham</i>
Cramb, Lester P.	E. E.	1925	<i>Melrose</i>
Crankshaw, Edwin	E. E.	1925	<i>Fall River</i>
Cressey, Dustin G.	E. E.	1922	<i>Malden</i>
Crockett, Elton G.	E. E.	1925	<i>Plainville</i>
Cross, Robert C.	M. E.	1925	<i>West Springfield</i>
Crossman, Hartwell H.	C. E.	1923	<i>Barrowsville</i>
Cruttenden, William B.	Ch. E.	1924	<i>Watertown, Conn.</i>
Cummings, John J.	C. E.	1923	<i>Roxbury</i>
Cummings, Roscoe L.	Ch. E.	1924	<i>Belmont</i>
Cundari, Joseph V.	C. E.	1924	<i>South Boston</i>
Cunningham, Linwood S.	C. E.	1924	<i>Burlington, Vt.</i>
Curra, Leonard A.	Ch. E.	1925	<i>Canton</i>
Curran, Francis M.	M. E.	1924	<i>Holyoke</i>
Cushing, Levi G.	E. E.	1923	<i>South Duxbury</i>
Cushing, Samuel	E. E.	1925	<i>Cambridge</i>
Cushing, Samuel A.	E. E.	1924	<i>Beverly</i>
Cutler, Wallace E.	E. E.	1925	<i>Franklin, N. H.</i>
Cutting, Clifford B.	M. E.	1925	<i>Melrose</i>
Damiani, Roland	C. E.	1924	<i>Beverly</i>
Damon, Donald B.	Ch. E.	1923	<i>Keene, N. H.</i>
Dane, Harry S.	Ch. E.	1925	<i>Roxbury</i>
Daniels, James W.	C. E.	1925	<i>Lupton, Mich.</i>
Davey, Frank H.	E. E.	1925	<i>New London, Conn.</i>
Davidson, Edward E.	M. E.	1925	<i>Everett</i>
Davidson, Edwin F.	Ch. E.	1925	<i>Atlantic</i>
Davis, Leon P.	C. E.	1923	<i>Kennebunk, Me.</i>
Davis, Robert F.	M. E.	1925	<i>Somerville</i>
Davis, Stuart S.	E. E.	1922	<i>Beverly</i>
Dawe, Allen S.	C. E.	1923	<i>Cambridge</i>
Day, George W.	E. E.	1925	<i>Boston</i>
Day, John L., Jr.	C. E.	1925	<i>Roslindale</i>

# REGISTER OF STUDENTS

NAME	DEPARTMENT	YEAR	HOME ADDRESS
Day, Wallace C.	C. E.	1925	<i>Springfield</i>
Dearborn, Elmore L.	C. E.	1922	<i>Hampton, N. H.</i>
DeMillia, Guy N.	E. E.	1925	<i>Cambridge</i>
Dickerman, Ralph T.	C. E.	1925	<i>Taunton</i>
Dickson, Franklin B.	E. E.	1925	<i>Milton, N. H.</i>
Dickson, Richard M.	A. E.	1924	<i>Holyoke</i>
Diggs, George L.	E. E.	1924	<i>Norwood</i>
D'Italia, Raymond	E. E.	1925	<i>Medford Hillside</i>
Dixon, Herbert C.	C. E.	1923	<i>Gloucester</i>
Doherty, Arthur H.	C. E.	1925	<i>Natick</i>
Dolan, Lawrence E.	E. E.	1925	<i>Middlebury, Vt.</i>
Donnelly, Robert L.	C. E.	1923	<i>Beverly</i>
Douglas, Alton L.	A. E.	1923	<i>East Hiram, Me.</i>
Downey, Ralph S.	M. E.	1922	<i>Hingham</i>
Drew, Edwin C.	E. E.	1925	<i>Marshfield Hills</i>
Driscoll, John J.	E. E.	1925	<i>Frammingham</i>
Drislane, William F.	Ch. E.	1924	<i>Lynn</i>
Dunlap, William F.	C. E.	1925	<i>Plymouth</i>
Dunlevy, John J.	Ch. E.	1925	<i>Newton</i>
Dunn, James E.	Ch. E.	1925	<i>Salem</i>
Durgin, Harold L.	C. E.	1924	<i>Kittery, Me.</i>
Duston, Carmill W.	M. E.	1923	<i>Frammingham</i>
Dyer, Russell H.	C. E.	1925	<i>Dorchester</i>
Dyson, Charles A.	M. E.	1924	<i>Springfield</i>
Eastman, Harlow V.	E. E.	1924	<i>Ossipee, N. H.</i>
Eaton, Spencer E.	C. E.	1925	<i>Taunton</i>
Edgar, Robert C.	C. E.	1925	<i>Dorchester</i>
Eldridge, Gordon B.	Ch. E.	1924	<i>Concord</i>
Eldridge, Raymond	E. E.	1925	<i>Ashland</i>
Elliott, Frank R.	Ch. E.	1924	<i>Springfield</i>
Ellis, Lawrence B.	Ch. E.	1925	<i>Whitman</i>
Ellis, Russell F.	M. E.	1924	<i>Middale, Conn.</i>
Ellms, Lindsay	E. E.	1923	<i>Cohasset</i>
Ely, Rodney, B.	C. E.	1924	<i>Centerbrook, Conn.</i>
Emery, Carl B.	C. E.	1924	<i>Portland, Me.</i>
Engstrand, Waldo	E. E.	1923	<i>Cranston, R. I.</i>
Engstrom, Howard T.	Ch. E.	1922	<i>Plymouth</i>
Erickson, Robert	M. E.	1925	<i>Fitchburg</i>
Ericson, Frederic O.	M. E.	1925	<i>Beverly</i>
Erskine, James S.	E. E.	1923	<i>Newburyport</i>
Everett, Albert E.	C. E.	1923	<i>Everett</i>
Ewell, Frederick A.	E. E.	1924	<i>Medford</i>
Fairbrother, Russell	Ch. E.	1925	<i>Bangor, Me.</i>
Faunce, Lawrence S.	M. E.	1922	<i>E. Rochester, N. H.</i>
Falt, Gordon H.	E. E.	1924	<i>Northeast Harbor, Me.</i>
Ferguson, Arthur W.	E. E.	1924	<i>Everett</i>
Ferguson, George F.	Ch. E.	1925	<i>E. Weymouth</i>
Fitzpatrick, Joseph B.	C. E.	1923	<i>Somerville</i>
Flanders, Henry R.	E. E.	1923	<i>Vineyard Haven</i>
Flood, Frank L.	C. E.	1922	<i>Frammingham</i>
Flynn, Roland W.	A. E.	1925	<i>Concord Junction</i>
Foisie, George E.	C. E.	1923	<i>Nashua, N. H.</i>
Foley, Harold E.	E. E.	1925	<i>Everett</i>

# SCHOOL OF ENGINEERING

NAME	DEPARTMENT	YEAR	HOME ADDRESS
Ford, James B.	E. E.	1924	<i>Melrose</i>
Foster, Harry B.	E. E.	1924	<i>Medford</i>
Foster, Kenneth E.	M. E.	1925	<i>Saugus</i>
Fowler, Earl W.	E. E.	1925	<i>Westfield</i>
Fowler, William H.	C. E.	1922	<i>Melrose</i>
Fox, F. Sumner	E. E.	1922	<i>Newburyport</i>
Fraser, William A.	E. E.	1923	<i>Jamaica Plain</i>
Frazee, Walter E.	E. E.	1924	<i>Medford</i>
Frazier, Stuart D.	Ch. E.	1925	<i>Hyde Park</i>
Freedman, Max D.	Ch. E.	1925	<i>Athol</i>
Freeman, Isadore	Ch. E.	1924	<i>Winthrop</i>
Freeman, James A.	C. E.	1924	<i>Attleboro Falls</i>
French, Benjamin H.	E. E.	1925	<i>Boston</i>
French, Murvin A.	E. E.	1925	<i>Framingham</i>
Friend, Omar W.	C. E.	1925	<i>No. Anson, Me.</i>
Frost, George	E. E.	1924	<i>West Lynn</i>
Frye, Harold B.	A. E.	1925	<i>Roxbury</i>
Frye, Richard F.	M. E.	1922	<i>Athol</i>
Fuller, John, Jr.	Ch. E.	1925	<i>Quincy</i>
Fundin, Hjalmar O. E.	M. E.	1923	<i>Mattapan</i>
Furrier, Joseph P.	C. E.	1923	<i>Lynn</i>
Gaffey, Francis J.	M. E.	1922	<i>Salem</i>
Gallagher, G. T.	C. E.	1925	<i>Dorchester</i>
Gallop, Myron E.	E. E.	1925	<i>Ridgeway, Me.</i>
Gandreau, Louis E.	M. E.	1925	<i>New London, Conn.</i>
Gannett, Paul R.	E. E.	1925	<i>Scituate</i>
Gargaro, Alfred A.	C. E.	1923	<i>West Quincy</i>
Garney, Emery W.	C. E.	1924	<i>Bridgewater</i>
Garr, Isadore	A. E.	1925	<i>Dorchester</i>
Gaylord, Richard N.	E. E.	1925	<i>Westfield</i>
Gerber, Nathan	M. E.	1925	<i>Roxbury</i>
Gilbert, Merton L.	E. E.	1923	<i>Cohasset</i>
Gillis, Paul D.	C. E.	1925	<i>Watertown</i>
Gilman, Cecil E.	Ch. E.	1925	<i>Madison, N. H.</i>
Gilson, Thomas S.	A. E.	1925	<i>Windsor, Vt.</i>
Given, Sidney H.	C. E.	1925	<i>W. Somerville</i>
Gladding, Richard S.	Ch. E.	1922	<i>Beverly</i>
Gleason, Carl B.	Ch. E.	1923	<i>Marblehead</i>
Goddard, George W.	M. E.	1924	<i>Somerville</i>
Gold, Meyer	E. E.	1924	<i>Aron, Conn.</i>
Golden, Martin F.	C. E.	1925	<i>Dorchester</i>
Gordon, Phineas	C. E.	1923	<i>Boston</i>
Gould, Joseph E.	Ch. E.	1922	<i>Roxbury</i>
Goulet, Narcisse T.	Ch. E.	1922	<i>Pawtucket, R. I.</i>
Grady, James T.	E. E.	1925	<i>South Boston</i>
Graham, Elmer W.	E. E.	1925	<i>Dorchester</i>
Graham, Warren J.	M. E.	1924	<i>Marlboro</i>
Gray, Ernest W.	Ch. E.	1923	<i>Scituate</i>
Gray, Wilbur S.	E. E.	1925	<i>Salem</i>
Grenier, Francis	Ch. E.	1925	<i>North Adams</i>
Grigas, Jasper C.	A. E.	1925	<i>Nashua, N. H.</i>
Grover, J. Madison	Ch. E.	1925	<i>Wellesley</i>
Grozier, John W.	E. E.	1923	<i>Foxboro</i>

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NAME	DEPARTMENT	YEAR	HOME ADDRESS
Grushky, Maurice	C. E.	1924	<i>Beverly</i>
Gunther, Frederick E.	E. E.	1922	<i>Roslindale</i>
Hackett, James D.	E. E.	1925	<i>Watertown</i>
Haines, Joseph E.	M. E.	1924	<i>Boston</i>
Hale, Harold W.	C. E.	1922	<i>Swansea</i>
Hale, James E.	E. E.	1925	<i>Monson</i>
Hall, Chardon M.	M. E.	1925	<i>Winchendon</i>
Hall, Robert A.	E. E.	1924	<i>Brookline</i>
Hallam, Frank W.	E. E.	1925	<i>Winthrop</i>
Hamilton, Carroll L.	E. E.	1925	<i>Portland, Me.</i>
Hammond, Cleon C.	E. E.	1923	<i>Abington</i>
Hannable, Daniel W.	M. E.	1925	<i>Beverly Farms</i>
Harding, Arthur E.	C. E.	1922	<i>Boston</i>
Harlow, Elmer R.	C. E.	1924	<i>Plymouth</i>
Harrington, Elvin E.	A. E.	1925	<i>Milton</i>
Harrington, Frank C.	E. E.	1924	<i>So. Woodstock, Conn.</i>
Harris, George A. X.	M. E.	1925	<i>Cambridge</i>
Harris, Henry S.	Ch. E.	1925	<i>Allston</i>
Harvey, Ralph H.	E. E.	1925	<i>South Berwick, Me.</i>
Haskell, J. Reginald	M. E.	1924	<i>Webster</i>
Haskins, Elmer E.	M. E.	1925	<i>Dighton</i>
Haskins, Howard L.	M. E.	1924	<i>Wollaston</i>
Hatch, Douglas P.	M. E.	1923	<i>Lynn</i>
Hathaway, Chauncey E.	Ch. E.	1922	<i>Dorchester</i>
Havlicek, Joseph A.	C. E.	1925	<i>Middletown, Conn.</i>
Hawks, Robert A.	E. E.	1924	<i>Newton Centre</i>
Heald, Theodore B.	A. E.	1925	<i>Amherst</i>
Hearty, Herbert W., Jr.	A. E.	1925	<i>Dorchester</i>
Hedlund, Charles F.	E. E.	1925	<i>Braintree</i>
Heinlein, Martin L.	E. E.	1923	<i>South Natick</i>
Henry, Bernard D.	C. E.	1925	<i>Melrose</i>
Herlihy, John A.	C. E.	1925	<i>Wilton, N. H.</i>
Herrick, Benjamin H.	C. E.	1924	<i>Wollaston</i>
Hiatt, Frank C.	E. E.	1923	<i>Malden</i>
Hill, George B.	Ch. E.	1923	<i>Berlin, N. H.</i>
Hiltz, Walter M.	E. E.	1925	<i>Everett</i>
Hinckley, Herbert P.	M. E.	1925	<i>Manaroneck, N. Y.</i>
Hjelmberg, Arthur G.	M. E.	1923	<i>Boston</i>
Hoffman, Harry J.	E. E.	1924	<i>Jamaica Plain</i>
Holland, Carl T.	E. E.	1922	<i>Nantasket</i>
Hollis, Howard W.	E. E.	1925	<i>Wareham</i>
Holmes, Ashton B.	E. E.	1925	<i>Charlestown, N. H.</i>
Holthaus, Frederick J.	E. E.	1922	<i>Winthrop</i>
Hopkins, Forrest R.	M. E.	1923	<i>Newport, N. H.</i>
Hopkins, Howe H.	M. E.	1925	<i>Trenton, Me.</i>
Houghton, Norman R.	E. E.	1925	<i>Stoncham</i>
Hovenanian, Hovenan	Ch. E.	1925	<i>Cambridge</i>
Howard, John M.	E. E.	1924	<i>Providence, R. I.</i>
Hubbard, Howard M.	A. E.	1924	<i>Springfield</i>
Hubby, Leon F.	E. E.	1924	<i>Lee</i>
Hulsman, David L.	Ch. E.	1922	<i>Everett</i>
Hulsman, Kenneth G.	C. E.	1924	<i>Everett</i>
Huntington, Clarence M.	M. E.	1923	<i>Cambridge</i>

# SCHOOL OF ENGINEERING

NAME	DEPARTMENT	YEAR	HOME ADDRESS
Ireland, Theodore S.	M. E.	1922	<i>Gloucester</i>
Ives, Walton S.	Ch. E.	1925	<i>Winthrop</i>
Jacobson, Howard	E. E.	1924	<i>Concord</i>
Jackson, John S.	Ch. E.	1925	<i>Lewiston, Me.</i>
Jaffe, Meyer R.	C. E.	1925	<i>North Adams</i>
Janes, George N.	E. E.	1925	<i>Cheslea</i>
Jenks, Donald G.	E. E.	1924	<i>Attleboro</i>
Jennings, Lawrence W.	A. E.	1923	<i>Winthrop</i>
Johnson, Donald	E. E.	1925	<i>Waltham</i>
Johnson, Evan	E. E.	1925	<i>Norwood</i>
Johnson, Henry D.	C. E.	1924	<i>Auburn, Me.</i>
Johnson, John E.	Ch. E.	1925	<i>Maynard</i>
Johnson, Joseph E.	A. E.	1923	<i>Roxbury</i>
Johnson, Theodore A.	C. E.	1925	<i>Marlboro</i>
Johnson, Walter A.	M. E.	1924	<i>Dorchester</i>
Jones, Archibald L.	E. E.	1923	<i>Middleton</i>
Jones, Henry C., Jr.	A. E.	1925	<i>Lowell</i>
Jones, Harold H.	C. E.	1923	<i>Swampscott</i>
Josephson, Harold C. W.	E. E.	1925	<i>Somerville</i>
Junior, Francis E.	C. E.	1922	<i>Plymouth</i>
Katzeff, Julius	Ch. E.	1925	<i>Winthrop</i>
Keene, Burton F.	E. E.	1923	<i>South Hanson</i>
Kelleher, James J.	M. E.	1922	<i>Salem</i>
Kelley, Charles E.	E. E.	1925	<i>Norwood</i>
Kelley, Harold W.	C. E.	1924	<i>Dorchester</i>
Kelley, Thomas G.	M. E.	1922	<i>Roslindale</i>
Kendrew, Albert E.	C. E.	1924	<i>Roxbury</i>
Kennedy, Parker R.	C. E.	1925	<i>Mattapan</i>
Kenney, David J.	C. E.	1923	<i>Boston</i>
Kenney, Francis B.	C. E.	1924	<i>Manchester, N. H.</i>
Kenney, John H.	A. E.	1923	<i>Boston</i>
Kershner, Walter L.	E. E.	1925	<i>Strong, Me.</i>
Keville, Leo A.	C. E.	1925	<i>Lowell</i>
Kimball, Carleton B.	E. E.	1925	<i>Salisbury</i>
Kimball, Donald S.	A. E.	1925	<i>Bridgewater</i>
King, Arthur M.	C. E.	1925	<i>Medway</i>
King, Earle	C. E.	1925	<i>Pottersville</i>
King, William H.	E. E.	1924	<i>Everett</i>
Klein, Morris	E. E.	1925	<i>Windsor, Vt.</i>
Knight, Robert H.	E. E.	1925	<i>Newbury</i>
Knight, Vernon H.	E. E.	1924	<i>Brockton</i>
Knopp, Otto R. H.	E. E.	1923	<i>E. Taunton</i>
Knudson, Carroll B.	E. E.	1925	<i>Boston</i>
Knuepfer, Charles F.	M. E.	1923	<i>Boston</i>
Kosak, Nathaniel	Ch. E.	1924	<i>Everett</i>
Krohn, Bertil W.	E. E.	1925	<i>W. Hartford, Conn.</i>
Kumpel, Edgar W.	C. E.	1924	<i>Everett</i>
LaMarche, Logan	C. E.	1924	<i>Cambridge</i>
Lamarine, Alfred E.	E. E.	1924	<i>Natick</i>
Lancaster, Elon F.	E. E.	1923	<i>Madison, Me.</i>
Landry, Ernest L.	E. E.	1925	<i>Thompsonville, Conn.</i>
Landy, George	E. E.	1925	<i>Boston</i>
Lane, Charles M., Jr.	E. E.	1924	<i>Hartford, Conn.</i>

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NAME	DEPARTMENT	YEAR	HOME ADDRESS
Langstroth, Guy N.	C. E.	1924	<i>Boston</i>
Langtry, Chester F.	C. E.	1925	<i>Framingham</i>
Larson, C. William	M. E.	1923	<i>Worcester</i>
Lassof, Israel	Ch. E.	1924	<i>Lexington</i>
Latimer, William	A. E.	1924	<i>Leominster</i>
Laubenstein, Karl G.	Ch. E.	1924	<i>Maynard</i>
Lauretzen, Walter M.	Ch. E.	1924	<i>Mattapan</i>
Law, William H.	C. E.	1924	<i>Rockport</i>
Lawler, John D.	Ch. E.	1923	<i>Lowell</i>
Lawton, Robert C.	M. E.	1925	<i>Orwell, Vt.</i>
Leach, Donald F.	M. E.	1925	<i>Whitman</i>
Leacy, Eugene S.	M. E.	1925	<i>Watertown</i>
Leavitt, Curtis G.	C. E.	1924	<i>Taunton</i>
Leavitt, Howard L.	E. E.	1924	<i>Roxbury</i>
Lee, Alfred	E. E.	1924	<i>Lawrence</i>
Lee, I. Albert	E. E.	1922	<i>Salem</i>
Lee, Walter H.	C. E.	1922	<i>Dorchester</i>
Leggett, David J.	Ch. E.	1925	<i>Assinippi</i>
Lent, Stanley B.	Ch. E.	1925	<i>Dorchester</i>
Lessard, Theodore T.	C. E.	1925	<i>Springfield</i>
Letourneau, Roland F.	Ch. E.	1923	<i>Rockland</i>
Levin, Eli	Ch. E.	1923	<i>Roxbury</i>
Levine, Maurice	C. E.	1925	<i>Fall River</i>
Levy, Hyman	E. E.	1923	<i>Boston</i>
Lewis, Clarence W.	E. E.	1924	<i>Beverly</i>
Lewis, Ervin H.	E. E.	1923	<i>Newtonville</i>
Lewis, John B.	C. E.	1925	<i>Arlington Hts.</i>
L'Heureux, Joseph A.	C. E.	1925	<i>Lowell</i>
Libby, Channing	C. E.	1925	<i>East Weymouth</i>
Lindsay, Edward A.	M. E.	1924	<i>Wollaston</i>
Linskog, Sidney W.	E. E.	1924	<i>Brockton</i>
Linell, Elmer G.	E. E.	1925	<i>Gardner</i>
Locash, Salvatore	C. E.	1925	<i>Wakefield</i>
Lockhart, Ralph C.	M. E.	1925	<i>Greenfield</i>
Locke, Roger P.	A. E.	1925	<i>Salem</i>
Lord, Forrest M.	E. E.	1925	<i>Sharon</i>
Loubris, Gaston E.	E. E.	1923	<i>Wakefield</i>
Lovejoy, Richard P.	Ch. E.	1922	<i>Franklin</i>
Low, Elmer F.	C. E.	1924	<i>Woodsford, Me.</i>
Lucas, Ernest H.	Ch. E.	1924	<i>Magnolia</i>
Lucy, Herbert S.	E. E.	1925	<i>Groton</i>
Luippold, John J.	M. E.	1925	<i>W. Roxbury</i>
Lundin, Erik H.	E. E.	1923	<i>Proctor, Vt.</i>
Lynch, Thomas J.	M. E.	1925	<i>Dorchester</i>
Mabey, Melvin	A. E.	1925	<i>Newton</i>
Macaulay, James E.	C. E.	1925	<i>Medford</i>
MacConnell, Norman J.	E. E.	1925	<i>Medford</i>
MacDonald, James V.	M. E.	1925	<i>Peabody</i>
MacDonald, Robert M. T.	M. E.	1924	<i>W. Roxbury</i>
MacKay, Chauncey D.	A. E.	1925	<i>Dorchester</i>
MacKinnon, Weber J.	E. E.	1925	<i>Meriden, Conn.</i>
MacLeod, Edward M.	E. E.	1925	<i>E. Dedham</i>
Macomber, Charles W.	E. E.	1925	<i>Marshfield Hills</i>

# SCHOOL OF ENGINEERING

NAME	DEPARTMENT	YEAR	HOME ADDRESS
McBride, Lloyd L.	E. E.	1925	Lubec, Me.
McCarthy, Louis B.	C. E.	1925	Newton
McCarthy, Robert E.	E. E.	1925	Natick
McCue, Edward L.	E. E.	1925	Roxbury
McElhinney, Earle S.	M. E.	1924	Lynn
McKenne, Charles D.	M. E.	1923	Everett
McKewen, George D.	Ch. E.	1924	Eastport, Me.
McManus, John P.	C. E.	1923	Roxbury
McNabo, Anthony H.	C. E.	1925	Bradford
McQuillan, Arthur J.	E. E.	1925	Dorchester
McSweeney, William H.	M. E.	1924	Salem
Mahoney, John H.	E. E.	1924	Salem
Mailhot, Willrod A.	E. E.	1925	Somersworth, N. H.
Malloch, Ernest M.	C. E.	1925	Eastport, Me.
Mallorey, Walter B.	E. E.	1925	Lynn
Malloy, John W.	M. E.	1924	Roxbury
Malm, Herbert A.	A. E.	1924	Worcester
Malnate, William F.	C. E.	1924	Quincy
Maloney, Edward F.	Ch. E.	1922	Dorchester
Mann, J. Ralph	Ch. E.	1925	Dorchester
Marcoux, Ernest A.	Ch. E.	1925	Watertown
Marcus, Jacob	Ch. E.	1922	Winthrop
Marcus, Maurice	C. E.	1922	Dorchester
Margeson, Vertrude C.	E. E.	1925	Everett
Marsh, Edwin E. R.	E. E.	1925	Pittsfield
Marshall, Elmer P.	Ch. E.	1924	Allston
Marshall, James P.	E. E.	1923	Hallowell, Me.
Martin, Arthur D.	C. E.	1925	Richford, Vt.
Martin, B. Malcolm	M. E.	1924	Swampscott
Martin, Herbert S.	Ch. E.	1925	Somerville
Martinelli, Henry C.	M. E.	1924	Springfield
Mason, Charles F.	E. E.	1924	Pownal, Vt.
Maurette, Rene G.	E. E.	1925	Medford
Maxwell, George W.	E. E.	1925	Melrose
Maxwell, Sherman O.	A. E.	1925	Somerville
May, Charles A.	C. E.	1924	Fairhaven, Vt.
Meade, William H., Jr.	E. E.	1923	Peabody
Meagher, John J.	C. E.	1922	E. Chelmsford
Merrill, Louis F.	A. E.	1925	Wollaston
Meserve, George H., Jr.	C. E.	1925	Medford
Messier, Joseph A.	E. E.	1924	Quincy
Miller, Merton W.	Ch. E.	1925	Waltham
Milne, David C.	C. E.	1923	Hackensack, N. J.
Mitchell, I. Earle	E. E.	1925	Wallingford, Conn.
Molliver, Henry	E. E.	1925	Chelsea
Moody, Donald C.	M. E.	1923	Bradford
Moore, Charles K.	C. E.	1924	Fall River
Morgan, Frederick N.	Ch. E.	1924	Everett
Morgan, Harold E.	A. E.	1925	Laurence
Morgan, Merrill R.	E. E.	1925	Lubec, Me.
Morgan, Stuart H.	Ch. E.	1922	Medford
Morrell, Stanley	E. E.	1923	Peabody
Morris, Joseph A.	E. E.	1924	New Britain, Conn.



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NAME	DEPARTMENT	YEAR	HOME ADDRESS
Morse, Howard W.	E. E.	1925	<i>Lynn</i>
Mower, C. Thomas	Ch. E.	1924	<i>Malden</i>
Murphy, Charles L.	C. E.	1924	<i>Worcester</i>
Murphy, Nelson L.	C. E.	1925	<i>Waltham</i>
Navisky, Moses	Ch. E.	1925	<i>Boston</i>
Nelson, Carl H.	A. E.	1925	<i>Dorchester</i>
Nelson, Edwin W.	A. E.	1925	<i>Hartford, Conn.</i>
Newman, Harry	Ch. E.	1925	<i>Salem</i>
Newman, Irving M.	E. E.	1924	<i>Boston</i>
Newton, Elmer C.	E. E.	1925	<i>Raymond, N. H.</i>
Niechcay, Frank K.	C. E.	1925	<i>Jamaica Plain</i>
Nivinski, Alexander A.	C. E.	1925	<i>Hyde Park</i>
Noble, Robert A.	E. E.	1923	<i>Rochester, Vt.</i>
Nolf, Ralph L.	E. E.	1925	<i>Webster</i>
Norberg, Ernest M.	C. E.	1922	<i>Medford</i>
Norton, George R.	M. E.	1925	<i>Aeon, Me.</i>
Noyes, Roswell L.	M. E.	1925	<i>Newburyport</i>
Nylin, Carl G.	M. E.	1922	<i>Worcester</i>
Nyman, Chester L.	C. E.	1922	<i>Marlboro</i>
Oakman, Roger G.	C. E.	1924	<i>Neponset</i>
O'Connell, Harold J.	E. E.	1925	<i>Dorchester</i>
Ogden, Milton P.	E. E.	1925	<i>Fall River</i>
Oliva, John F.	E. E.	1924	<i>E. Weymouth</i>
Olson, Roy C.	M. E.	1925	<i>Squantum</i>
O'Roak, Ralph D.	M. E.	1925	<i>Pittsfield, Me.</i>
O'Sullivan, Cornelius R.	E. E.	1925	<i>Lawrence</i>
Overbeck, Royal C.	Ch. E.	1924	<i>Gloucester</i>
Oxley, John J.	Ch. E.	1925	<i>Pawtucket, R. I.</i>
Oxnard, Edward P.	Ch. E.	1925	<i>West Medford</i>
Paige, Herman A.	A. E.	1925	<i>Dorchester</i>
Palmer, Reginald W.	C. E.	1925	<i>Norfolk Downs</i>
Parad, Emanuel	M. E.	1922	<i>Boston</i>
Parker, Albert I.	M. E.	1925	<i>Melrose</i>
Parker, Burton C.	C. E.	1925	<i>Holden</i>
Parker, Horace R., Jr.	E. E.	1925	<i>Swampscott</i>
Parmenter, Richard	C. E.	1925	<i>Ashland</i>
Parson, Alfred D.	C. E.	1922	<i>Melrose</i>
Parsons, Edward S.	C. E.	1922	<i>Gloucester</i>
Parsons, William N.	C. E.	1924	<i>Gloucester</i>
Pascoe, Thomas E.	M. E.	1922	<i>Chocorua, N. H.</i>
Paulsen, Iver E.	Ch. E.	1923	<i>Woburn</i>
Paver, William H.	M. E.	1922	<i>Franklin</i>
Pearce, Howard T.	C. E.	1922	<i>Concord Junction</i>
Pearson, Carl R.	C. E.	1922	<i>Winthrop</i>
Peck, Donald L.	E. E.	1923	<i>Framingham</i>
Penniman, John R.	C. E.	1924	<i>Whitman</i>
Perkins, Eustace J.	E. E.	1925	<i>Wenham</i>
Perley, George T.	E. E.	1924	<i>Wollaston</i>
Perry, Alfred L.	M. E.	1924	<i>Everett</i>
Perry, Edward J.	M. E.	1923	<i>Putnam, Conn.</i>
Perry, Lyndall R.	Ch. E.	1925	<i>Medford</i>
Peterson, Andrew M.	Ch. E.	1925	<i>South Boston</i>
Peterson, Arthur W.	E. F.	1925	<i>Wellesley</i>

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NAME	DEPARTMENT	YEAR	HOME ADDRESS
Peterson, Clarence W.	M. E.	1923	<i>Everett</i>
Peterson, Douglas A.	E. E.	1925	<i>Brighton</i>
Peterson, Halvar A.	E. E.	1925	<i>Waltham</i>
Philbrick, Albert W.	E. E.	1924	<i>Kittery, Me.</i>
Phillips, Howard A.	E. E.	1925	<i>Petersham</i>
Phinney, Edward D.	E. E.	1924	<i>Topsham, Me.</i>
Pierce, Melvin G.	E. E.	1925	<i>Arlington</i>
Pierce, Webster W.	M. E.	1923	<i>Quincy</i>
Pinkul, Edward J.	C. E.	1924	<i>Dorchester</i>
Pitman, George M.	C. E.	1925	<i>Salem</i>
Plante, Elphage E.	E. E.	1925	<i>Manchaug</i>
Platt, Charles E.	E. E.	1925	<i>Medford Hillside</i>
Plaus, Harley O.	M. E.	1925	<i>Worthington</i>
Plunkett, Robert K.	M. E.	1924	<i>Dorchester</i>
Proctor, Lloyd V.	E. E.	1925	<i>So. Weymouth</i>
Prophet, Alta A.	C. E.	1925	<i>Clinton</i>
Poley, Abraham	A. E.	1925	<i>Boston</i>
Powell, John R.	M. E.	1925	<i>Waverly</i>
Powers, Everett A.	Ch. E.	1925	<i>Gloucester</i>
Powers, Fern L. B.	E. E.	1925	<i>Laconia, N. H.</i>
Publicover, Lewis E.	E. E.	1924	<i>Gloucester</i>
Putnam, Charles H.	M. E.	1924	<i>Webster</i>
Quilty, Ralph G.	Ch. E.	1924	<i>Dorchester</i>
Quinn, John F.	E. E.	1923	<i>Salem</i>
Rabinowitz, Louis	E. E.	1924	<i>Roxbury</i>
Ravden, Sydney	Ch. E.	1925	<i>Dorchester</i>
Ravreby, Abraham A.	Ch. E.	1925	<i>Boston</i>
Read, Alden W.	E. E.	1924	<i>Bridgewater</i>
Read, Herbert C.	Ch. E.	1925	<i>Springfield</i>
Reed, Kenneth D.	A. E.	1925	<i>Winthrop</i>
Reed, Linwood L.	M. E.	1923	<i>Everett</i>
Reed, Miller G.	E. E.	1924	<i>Boothbay Harbor, Me.</i>
Reed, Robert F.	E. E.	1923	<i>Granville Ferry, N. S.</i>
Reilly, Rupert M.	M. E.	1925	<i>Bristol, Me.</i>
Reuther, Willard E.	E. E.	1925	<i>Jefferson</i>
Rhoades, Clifford T.	C. E.	1922	<i>Bridgewater</i>
Riccio, Angelo P.	M. E.	1925	<i>Watertown</i>
Rich, Luke A.	Ch. E.	1923	<i>Newton</i>
Rich, Roy D.	A. E.	1925	<i>Athol</i>
Richard, Irene T.	M. E.	1924	<i>Salem</i>
Richards, Charles N.	C. E.	1925	<i>Milton</i>
Rideout, Edward H.	Ch. E.	1925	<i>West Somerville</i>
Riggio, Samuel A.	C. E.	1924	<i>Ivoryton, Conn.</i>
Ripley, Franklin L.	Ch. E.	1925	<i>W. Stewartstown, N. H.</i>
Roach, Harold N.	A. E.	1925	<i>N. Gloucester, Me.</i>
Robbins, Bertrand B.	E. E.	1922	<i>Elmwood</i>
Roberts, Frank	Ch. E.	1925	<i>Everett</i>
Roberts, George I.	E. E.	1924	<i>E. Weymouth</i>
Roberts, Ulysses K.	E. E.	1925	<i>Berwick, Me.</i>
Robinson, William J.	Ch. E.	1923	<i>Pawtucket, R. I.</i>
Roby, Wilbur	E. E.	1925	<i>Arlington</i>
Rogers, Allan H.	E. E.	1924	<i>Jonesport, Me.</i>
Rommer, George J.	A. E.	1925	<i>Dorchester</i>

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NAME	DEPARTMENT	YEAR	HOME ADDRESS
Rood, Clarence B.	C. E.	1925	<i>West Medford</i>
Root, Burritt A.	M. E.	1923	<i>New Britain, Conn.</i>
Rosen, Philip	Ch. E.	1922	<i>Boston</i>
Rosenblatt, Irving I.	C. E.	1922	<i>Saxonville</i>
Rubin, Benjamin	C. E.	1923	<i>Roxbury</i>
Rubin, Morris	C. E.	1925	<i>Roxbury</i>
Rundlett, John C.	C. E.	1924	<i>Newburyport</i>
Russell, Charles C.	E. E.	1923	<i>Exeter, N. H.</i>
Russell, John B.	C. E.	1924	<i>Quincy</i>
Sampson, Edward N.	E. E.	1922	<i>Quincy</i>
Sanborn, Frank D.	M. E.	1924	<i>Springfield, Vt.</i>
Sanborn, George H.	M. E.	1924	<i>Springfield, Vt.</i>
Sanderson, Albert E.	C. E.	1925	<i>Waltham</i>
Savignac, Alphonse L.	C. E.	1923	<i>Amesbury</i>
Savikoski, George V.	Ch. E.	1925	<i>Maynard</i>
Sawtell, Raymond I.	E. E.	1924	<i>Shrewsbury</i>
Sawyer, Russell D.	M. E.	1925	<i>Concord</i>
Schaller, Irving R.	E. E.	1924	<i>Salem</i>
Schneider, Arthur E.	Ch. E.	1925	<i>Meriden, Conn.</i>
Schofield, Clifford L.	Ch. E.	1925	<i>Maynard</i>
Schwartz, Joseph P.	C. E.	1923	<i>Revere</i>
Seaman, Walter R.	A. E.	1925	<i>Roxbury</i>
Secord, Harold W. M.	E. E.	1923	<i>Newton</i>
Semenyna, Waldimir	C. E.	1924	<i>Boston</i>
Shailer, Fisk A.	M. E.	1924	<i>Chester, Conn.</i>
Shapiro, David	C. E.	1925	<i>Fall River</i>
Sharples, Oswald	E. E.	1925	<i>Waltham</i>
Shaw, J. Arnold	Ch. E.	1924	<i>Danvers</i>
Shaw, Richard C.	M. E.	1923	<i>E. Bridgewater</i>
Shea, Albert L.	A. E.	1925	<i>Runford, Me.</i>
Shenk, Norman A.	C. E.	1925	<i>Medford</i>
Shepard, Chester D.	A. E.	1925	<i>Everett</i>
Shields, Francis R.	E. E.	1925	<i>Malden</i>
Shopneck, Henry P.	Ch. E.	1922	<i>Boston</i>
Short, B. James	E. E.	1925	<i>Boston</i>
Short, Randolph	E. E.	1925	<i>Newburyport</i>
Shumavonian, Sorun P.	C. E.	1924	<i>Dorchester</i>
Shumway, Herbert L.	M. E.	1923	<i>Mattapan</i>
Sibley, Clifton A.	A. E.	1925	<i>Salem</i>
Silverman, Morris	M. E.	1924	<i>Quincy</i>
Siselsky, Morris	E. E.	1925	<i>Boston</i>
Sisson, Rollo H.	E. E.	1925	<i>E. Providence</i>
Slobin, Harold M.	C. E.	1925	<i>Worcester</i>
Small, Howard H.	A. E.	1925	<i>New Gloucester, Me.</i>
Smethurst, Raymond	C. E.	1925	<i>Hopedale</i>
Smiley, Kenneth	Ch. E.	1925	<i>Skowhegan, Me.</i>
Smith, Benjamin L.	E. E.	1923	<i>Concord</i>
Smith, Farnham W.	Ch. E.	1923	<i>Concord</i>
Smith, Robert B.	A. E.	1924	<i>Leominster</i>
Smith, Thomas J.	E. E.	1925	<i>Medford</i>
Somes, John J.	M. E.	1924	<i>Gloucester</i>
Sondberg, Thomas	Ch. E.	1925	<i>York Village, Me.</i>
Souther, George H.	M. E.	1924	<i>Winthrop</i>

# SCHOOL OF ENGINEERING

NAME	DEPARTMENT	YEAR	HOME ADDRESS
Southworth, Burton	E. E.	1924	W. Stoughton
Soutter, Earle H.	E. E.	1925	Charlestown
Spaulding, Harold L.	E. E.	1925	Sharon
Spaulding, Howard P.	A. E.	1925	W. Stoughton
Spear, Chester M.	M. E.	1925	Brockton
Sperl, Warren	Ch. E.	1922	Auburndale
Spiegel, Maurice	Ch. E.	1925	Malden
Spofford, Frank J.	E. E.	1925	Haverhill
Stanetsky, Louis	Ch. E.	1925	Everett
Stanton, Fred P., Jr.	E. E.	1924	Wenham
Staples, Arthur C.	E. E.	1924	Scraganset
Stearns, Elton O.	C. E.	1924	Waltham
Steere, Harry W.	E. E.	1925	Amesbury
Stenquist, Edward H.	M. E.	1924	Worcester
Stephenson, William G.	C. E.	1925	Nedham
Stern, Frederick P.	C. E.	1925	Somerville
Stevens, Charles N.	E. E.	1925	Mattapan
Stevens, Thomas A.	E. E.	1923	Deep River, Conn.
Stimson, Glen H.	M. E.	1924	Athol
Stockwell, Phillip J.	E. E.	1925	Reading
Story, Clinton R.	A. E.	1925	Salem
Stotz, Herman C.	C. E.	1924	Brighton
Stratton, Aubrey E.	C. E.	1925	W. Townsend, Vt.
Strong, John S.	M. E.	1924	Winthrop
Studler, Morris	C. E.	1925	Boston
Sullivan, George E.	E. E.	1925	Beverly
Sullivan, John J.	E. E.	1922	Holyoke
Sullivan, William H.	M. E.	1922	Salem
Swanson, Gustaf	Ch. E.	1923	Proctor, Vt.
Swanson, Wallace C.	M. E.	1924	Lynn
Swasey, Richard L.	E. E.	1925	Waterbury, Vt.
Sweetland, William F., Jr.	E. E.	1924	Providence, R. I.
Swetsoff, Benjamin N.	E. E.	1925	Roxbury
Swift, Ralph E.	M. E.	1925	Longmeadow
Tarplin, Emanuel	Ch. E.	1923	Lynn
Taylor, A. Pirrie	M. E.	1924	Dorchester
Taylor, Leslie I.	C. E.	1925	Hartford, Conn.
Taylor, Robert N.	Ch. E.	1924	Watertown
Tebbetts, Eugene L.	Ch. E.	1925	Holliston
Tellier, Chester L.	Ch. E.	1925	Braintree
Theriault, Joseph E.	C. E.	1925	Newton
Thomas, Raymond I.	E. E.	1925	Milford
Thompson, Alan M.	C. E.	1923	Rosindale
Thompson, George B. S.	E. E.	1925	Willimantic, Conn.
Thompson, George M.	E. E.	1925	Norwood
Thompson, Harold C.	C. E.	1923	Bridgewater
Thompson, Herbert L.	Ch. E.	1923	Norwood
Thomson, Claude W. R.	M. E.	1924	Holyoke
Thomson, Earl H.	M. E.	1925	Boston
Thurston, George T.	A. E.	1925	Fall River
Tibbetts, Roger M.	E. E.	1925	Newcastle, Me.
Tisdale, Donald C.	E. E.	1925	Norwell
Titcomb, Oliver S.	M. E.	1924	Somerville

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NAME	DEPARTMENT	YEAR	HOME ADDRESS
Toas, Norman H.	Ch. E.	1925	<i>Boston</i>
Todd, Floyd E.	M. E.	1925	<i>York, Me.</i>
Toole, Cameron S.	C. E.	1922	<i>Clinton</i>
Toole, Harold J.	A. E.	1925	<i>Clinton</i>
Topalian, Asadore	E. E.	1923	<i>Brighton</i>
Topalian, Stephen P.	C. E.	1925	<i>Boston</i>
Torrey, Joseph H.	M. E.	1925	<i>Bath, Me.</i>
Travis, Robert E.	M. E.	1922	<i>Frammingham</i>
Tucker, Nathan	C. E.	1925	<i>Dorchester</i>
Tucker, Newton E.	Ch. E.	1925	<i>New Britain, Conn.</i>
Tukey, Egbert O.	—	1925	<i>Pemaquid, Me.</i>
Tulloch, Douglas F.	E. E.	1924	<i>Bridgewater</i>
Turner, Burton G.	C. E.	1922	<i>Eastport, Me.</i>
Ulmer, Donald J.	E. E.	1924	<i>Norton</i>
Urquhart, James W.	C. E.	1925	<i>Waltham</i>
Vandenkerckhoven, William	E. E.	1924	<i>Bethel, Me.</i>
Veale, Louis V.	A. E.	1925	<i>Barre, Vt.</i>
Vigdor, Irving A.	E. E.	1924	<i>Dorchester</i>
Vincent, George D.	C. E.	1924	<i>Watertown</i>
Vines, Frederick D. L.	E. E.	1924	<i>Greenbush</i>
Visnick, Alexander	A. E.	1925	<i>Mattapan</i>
Vodoklys, Frank V.	Ch. E.	1925	<i>Maynard</i>
Wade, Edward A.	E. E.	1924	<i>Jamaica Plain</i>
Waldron, F. Elliott	E. E.	1924	<i>Gloucester</i>
Walker, Lawrence D.	Ch. E.	1924	<i>Watertown</i>
Waller, Frederick M.	M. E.	1925	<i>Gaylordsville, Conn.</i>
Waller, Ivan R.	A. E.	1925	<i>Milton</i>
Warner, David G.	M. E.	1924	<i>Sterling</i>
Warner, W. Darrington	E. E.	1924	<i>Newburyport</i>
Watson, Francis	M. E.	1925	<i>Jamaica Plain</i>
Waugh, Leslie W.	C. E.	1925	<i>East Boston</i>
Way, Alexander B., Jr.	M. E.	1925	<i>Reading</i>
Weiner, Mitchell	E. E.	1925	<i>Roxbury</i>
Wentworth, Clarence S.	M. E.	1922	<i>Revere</i>
Weschrob, Charles W.	M. E.	1925	<i>Dedham</i>
Weston, Philip O.	E. E.	1924	<i>Mattapan</i>
Wetmore, George H.	E. E.	1924	<i>Peabody</i>
Wheeler, Clifford E.	Ch. E.	1922	<i>Malden</i>
Wheeler, Harold W.	Ch. E.	1924	<i>Winthrop</i>
White, Albert	Ch. E.	1925	<i>Mattapan</i>
White, Earl M.	E. E.	1925	<i>Abington</i>
White, George W.	A. E.	1925	<i>E. Woodstock, Conn.</i>
White, William C.	E. E.	1925	<i>Dorchester</i>
Whitehead, Arthur F.	C. E.	1925	<i>Atlantic</i>
Whiting, Raymond C.	M. E.	1925	<i>Upton</i>
Whitney, Stanley Y.	E. E.	1925	<i>Medford</i>
Whiton, Wilson	M. E.	1923	<i>Hingham</i>
Wickerson, Clarence R.	C. E.	1925	<i>Eastport, Me.</i>
Wilcox, Arthur L.	C. E.	1924	<i>Maynard</i>
Wilcox, Vaughan L.	A. E.	1925	<i>Mars Hill, Me.</i>
Willey, Laurence V.	C. E.	1924	<i>Skowhegan, Me.</i>
Williams, Charles I.	M. E.	1922	<i>Quincy</i>
Williams, Clifton S.	E. E.	1925	<i>Hartford, Conn.</i>

## SCHOOL OF ENGINEERING

NAME	DEPARTMENT	YEAR	HOME ADDRESS
Williams, Edwin C.	C. E.	1922	<i>Natick</i>
Willis, Howard A.	Ch. E.	1923	<i>Melrose Highlands</i>
Wilson, David C.	M. E.	1925	<i>South Norwalk, Conn.</i>
Wineblatt, Michael	E. E.	1924	<i>Salem</i>
Winslow, Francis G.	A. E.	1925	<i>South Hanover</i>
Winslow, Lawrence A.	E. E.	1925	<i>Watertown</i>
Witherell, Eugene E.	M. E.	1925	<i>Rehoboth</i>
Witherell, Roger	C. E.	1925	<i>Taunton</i>
Wood, Manson E.	E. E.	1923	<i>Wakefield</i>
Wooding, George S.	C. E.	1925	<i>Wallingford, Conn.</i>
Woodworth, Ernest H.	E. E.	1925	<i>Newton</i>
Works, Herbert F.	E. E.	1925	<i>Marlboro</i>
Wright, Moses E., Jr.	E. E.	1922	<i>Newburyport</i>
Wright, Maurice H.	Ch. E.	1924	<i>Springfield</i>
Wylde, Carlton T.	C. E.	1925	<i>North Adams</i>
Wyner, Henry I.	A. E.	1925	<i>Allerton</i>
Young, Claude	M. E.	1924	<i>Quincy</i>
Young, George F., Jr.	E. E.	1925	<i>Somerville</i>
Young, Herbert M.	Ch. E.	1925	<i>Maynard</i>
Young, Horace B.	M. E.	1923	<i>Atlantic</i>
Young, Kenneth C.	E. E.	1925	<i>Portsmouth, N. H.</i>
Young, Walter H.	E. E.	1924	<i>Matineus, Me.</i>
Young, Wilfred A.	E. E.	1923	<i>Baltic, Conn.</i>
Zak, Alexander M.	C. E.	1925	<i>Boston</i>
Ziegler, George L.	M. E.	1925	<i>Concord Junction</i>
Ziegler, Theodore W.	M. E.	1925	<i>East Lynn</i>
Ziegra, Albert G.	Ch. E.	1924	<i>Deep River, Conn.</i>

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**NORTHEASTERN COLLEGE  
SCHOOL OF ENGINEERING**

*Boston, Mass., .....192*

*To the Dean:*

*Name in full .....*

*hereby respectfully applies for admission to the.....  
Engineering Curriculum of the School of Engineering for the school  
year 19    -19    , and submits the following data:*

*Residence ..... Street*

*Town .....*

*State ..... Tel. ....*

*Date of Birth ..... Age .....*

*Parent (father's) Name .....*

*“       “       Address .....*

*Graduate of..... High School.    Year.....*

*Location of High School.....*

*If not a graduate, how many years were you in High School?.....*

*When did you leave? .....*

*Why did you leave? .....*

*Name of Principal.....*

*If employed since graduation, what is the name of your em-  
ployer? .....*

*Employer's address .....*

*Names and addresses of two other persons, not clergymen, to  
whom we may direct inquiries concerning you. (Give former  
employers' if possible.)*

*.....*

*.....*

*.....*

*If admitted to the school, do you plan to complete the full four  
years' curriculum and qualify for the degree?.....*



# NORTHEASTERN COLLEGE

AND AFFILIATED SCHOOLS

---

## DAY SCHOOL

### SCHOOL OF ENGINEERING

Four-year courses in Civil, Mechanical, Electrical, Chemical, and Administrative Engineering leading to the degrees of Bachelor of Civil, Mechanical, Electrical, and Chemical Engineering: B.C.E., B.M.E., etc. The school is conducted in co-operation with engineering firms. Students earn while learning. Open to high-school graduates.

Work conducted at Boston.

## EVENING SCHOOLS

### SCHOOL OF LAW (CO-EDUCATIONAL)

Four-year course leading to the degree of Bachelor of Laws. Complete preparation for the Bar Examinations and the practice of law. Case method of instruction. Day school standards of scholarship. Courses organized for business men and women who desire a legal training. Open to high-school graduates or those with an equivalent education. A limited number of men and women of maturity and experience admitted each year as special students, not candidates for the LL.B. degree.

Work conducted at Boston, and in Divisions at Worcester, Springfield, and Providence.

### SCHOOL OF COMMERCE AND FINANCE

Four-year curriculums in Professional Accounting and Business Administration, leading to the degrees of Bachelor and Master of Commercial Science. Open to high school graduates or those with an equivalent education.

A limited number of students with business experience may be admitted as special students, not candidates for the degrees. Special two-year curriculums and unit courses are open to students who desire to specialize in a particular field.

Work conducted at Boston, and at the Divisions and Branches at Worcester, Springfield, Providence, Bridgeport, New Haven, Lynn, Cambridge, Malden, and Newton.

## AFFILIATED SCHOOLS

### EVENING POLYTECHNIC SCHOOL

A school offering three-year courses in Civil, Mechanical, Electrical, Chemical, Structural, Industrial, and Automotive Engineering, leading to a diploma. The school trains men for positions of trust and responsibility.

Work conducted at Boston and in Divisions at Worcester, Springfield, New Haven, and Bridgeport. (The school in Worcester is known as the "Evening School of Applied Science.")

### NORTHEASTERN PREPARATORY SCHOOL

Courses of high school grade in English, Ancient and Modern Languages, Mathematics, History, Economics, Government, Chemistry, Physics, Penmanship, Bookkeeping, Shorthand, and Mechanical Drawing. Instructors from high schools. The school offers facilities for a four-year course in the evening, and is in session for three terms of sixteen weeks each year. It is possible for students to meet college entrance requirements in from three to five years of evening work.

Work conducted at Boston and in Divisions at Worcester and New Haven.

### VOCATIONAL INSTITUTE

A school offering short, intensive courses of a special nature to men whose time is limited. Courses include: Public Speaking for Business Men, Salesmanship, Foremanship, Home Building, Real Estate, Investments, etc.

Automotive School for Owners, Chauffeurs, Salesmen, Mechanics, with special day and evening courses in Auto Up-keep, Driving, Repair, Starting, Lighting, and Ignition, Acetylene Welding, Auto Painting, Auto Upholstery, Battery Repair. Courses are from four to thirty-six weeks in length and students may enter any Monday.

---

*For further information concerning any of the above schools, address*

## NORTHEASTERN COLLEGE

316 Huntington Avenue, Boston 17, Massachusetts  
or nearest division or branch

# SCHOOL OF ENGINEERING



FOUNDED FOR THE INSTRUCTION  
OF MEN IN THE THEORY AND  
PRACTICE OF ENGINEERING

# NORTHEASTERN UNIVERSITY

## SCHOOL OF BUSINESS ADMINISTRATION

DAY SESSIONS



1922-23

Boston Young Men's Christian Association  
316 Huntington Avenue  
Boston, Massachusetts



# NORTHEASTERN UNIVERSITY

## SCHOOL OF BUSINESS ADMINISTRATION

DAY SESSIONS

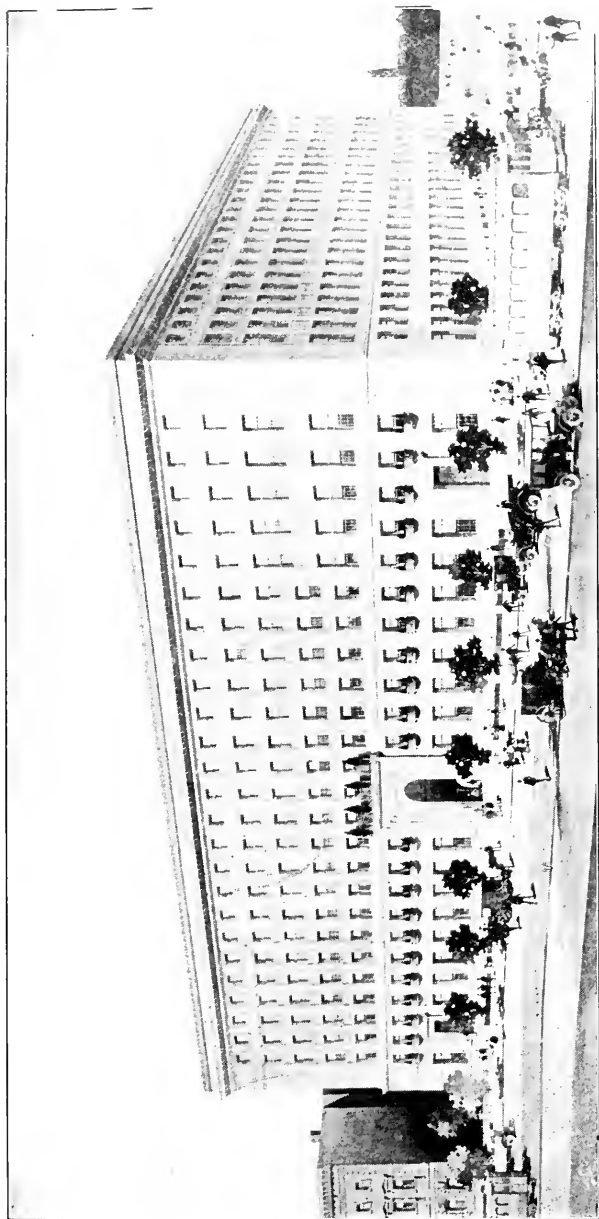


1922-23

Northeastern University of the Boston.  
Y. M. C. A. is Incorporated under  
the Laws of Massachusetts







ASSOCIATION BUILDING, NORTHEASTERN UNIVERSITY  
(MAIN BUILDING)

## CALENDAR 1922-1923

### 1922

June	26-30	Entrance examinations.
September	11-15	Entrance examinations.
September	16	Registration.
September	18	First semester opens.
October	12	Columbus Day.
November	29 to	
December	3	Thanksgiving Recess.
(inclusive)		

### 1923

December	24 to	
January	3	Christmas Recess.
(inclusive)		
January	20	First semester closes.
January	22	Mid-year examinations begin.
January	29	Second semester opens.
February	22	Washington's Birthday.
March	29 to	
April	4	Easter Recess.
(inclusive)		
April	19	Patriot's Day.
May	26	Second semester closes.
May	28	Final examinations begin.
May	30	Memorial Day.

# NORTHEASTERN UNIVERSITY

## *Board of Governors*

ALBERT HARMON CURTIS, Chairman  
GALEN DAVID LIGHT, Secretary  
WILMAN EDWARD ADAMS  
WILLIAM CONVERSE CHICK  
WALTON LEE CROCKER  
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FRANK PALMER SPEARE  
FRANCIS ROBERT CARNEGIE STEELE

---

## *Corporation of School of Business Administration*

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Vice-President  
LEWIS ABBOTT CROSSETT, Treasurer  
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## *Officers*

FRANK PALMER SPEARE, LL.B., M.H.  
President

GALEN DAVID LIGHT, A.B.  
General Assistant to the President and Secretary of the University

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President

GALEN DAVID LIGHT, A.B.  
Secretary

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Dean of the School of Business Administration

CARL DAVID SMITH, B.H.  
Director of University Extension

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Superintendent of Secondary Schools

FRED COLFAX SMITH, A.B., B.S.  
Director Vocational Institute

---

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EVERETT A. CHURCHILL, Chairman

Committee on Curriculums  
CARL S. ELL, Chairman

Committee on Commencement  
GALEN D. LIGHT, Chairman

Committee on Catalogues  
CARL D. SMITH, Chairman

---

(The President and Secretary of the University are ex-officio members of all Committees.)

FRED MILL

B.S., University of Pennsylvania, 1914  
B.Litt., University of Oxford, 1921; Dean

TURNER FLOWERS GARNER

B.A., Cumberland University, 1914; Registrar

ROBERT BRUCE

B.C.S., Northeastern, 1914; M.C.S., Ibid, 1916  
Instructor, Evening School of Commerce and Finance

PHILIP FRANCIS CLAPP

B.C.S., Northeastern, 1915  
C.P.A., Member of Charles F. Rittenhouse & Company

ERNEST HENRY GRISWOLD

B.S., Dartmouth, 1911; C.P.A., Member of Griswold & Conant

RAYMOND DELMAR WILLARD

B.C.S., Northeastern, 1918  
C.P.A., Member of Robert Douglas & Company

WESLEY LEE PAUL

A.B., Pomona, 1917; M.B.A., Graduate School of Business  
Administration, Harvard University, 1919; Assistant Comptroller,  
Conrad & Company

### *Lecturers*

FRANK PALMER SPEARE

President, Northeastern University

FRANCIS ROBERT CARNEGIE STEELE

Resident Partner, Patterson, Teele & Dennis

WALTON LEE CROCKER

President, John Hancock Life Insurance Company

WILLIAM SUMNER KEMP

Treasurer, Holtzer-Cabot Company

WILLIAM J. CUNNINGHAM

James J. Hill, Professor of Transportation,  
Graduate School of Business Administration, Harvard University

JOSEPH EDWARD MASTERS

Resident Partner, Price, Waterhouse & Company

GEORGE SUMNER SMITH

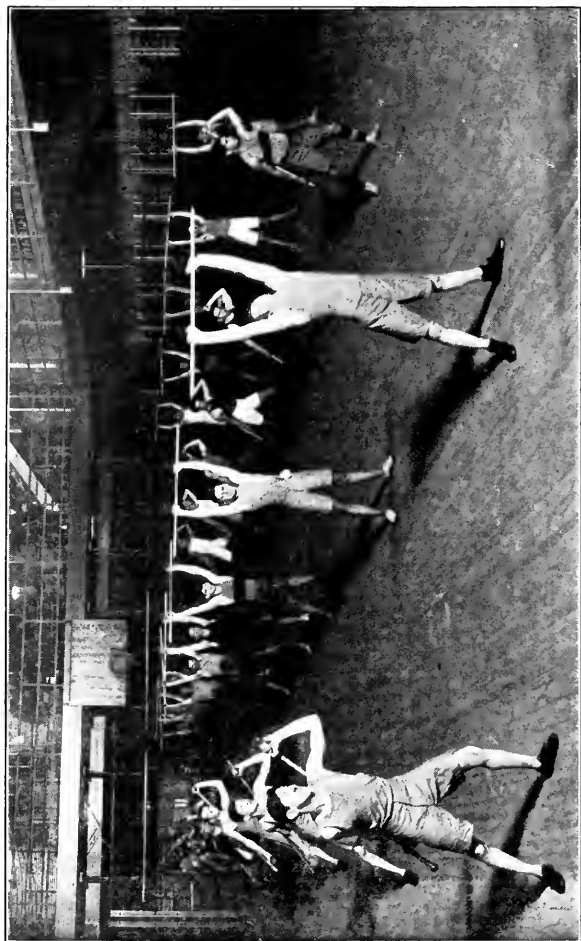
Formerly President of Chamber of Commerce  
President of the New England Company

FRANKLIN WILE GANSE

Manager, Columbian National Life Insurance Company

CHARLES F. RITTENHOUSE

Charles F. Rittenhouse & Company



GYMNASIUM

# NORTHEASTERN UNIVERSITY

## HISTORICAL SKETCH

The incorporation of Northeastern University of the Boston Young Men's Christian Association in March, 1916, marked the culmination of a notable development. The University is not a new institution, but a realization of an ideal carefully worked out and persistently followed for a period of many years. The Boston Young Men's Christian Association, established in 1851, had as one of its first lines of endeavor evening classes for young men.

It was not, however, until 1896 that the evening school system was placed upon a permanent basis with expert supervision. As courses were being offered in increasingly large numbers, it became evident that a more complete organization should be effected, with the result that the courses were grouped as separate schools, such additional courses being offered as would complete the curricula of the several schools.

The School of Law, established 1898, was incorporated in 1904 with degree granting power. The School of Commerce and Finance, founded in 1907, was incorporated in 1911, and was given the right by the State to grant the Bachelor and Master of Commercial Science degrees. The Day School of Engineering was opened in 1909, and received in 1920 the right to grant the following degrees: Bachelor of Chemical Engineering, Bachelor of Mechanical Engineering, Bachelor of Electrical Engineering, and Bachelor of Civil Engineering. Affiliated with the University are the Evening Polytechnic School, the Huntington School for Boys, and the Northeastern Preparatory School. Divisions of the University have been established at Worcester, Springfield, Bridgeport, New Haven, and Providence, offering the

four-year courses in one or more of the following schools: School of Law, School of Commerce and Finance, Evening Polytechnic School.

## THE SCHOOL OF BUSINESS ADMINISTRATION

On the 6th of March, 1922, the Board of Governors authorized the opening of a new day School of Business Administration in September, 1922. This step is not only in accord with the policy of Northeastern University to expand its sphere of usefulness but it is in keeping with the progress of the science of business administration, which is still in its infancy. Until recently, schools gave descriptive courses on business subjects along with the academic and cultural courses of the usual college curriculum, but practically nothing was done to analyze business and to develop the science of business administration. The faculty of the school will be composed of men trained in the new science of business.

The School of Business Administration is not a new and untried experiment, because the administrative officers of the Northeastern University have had more than ten years' experience in the developing of the Evening School of Commerce and Finance, from which about five hundred men have been graduated.

The School does not allow the haphazard election of unrelated courses on the part of the student, but provides a well-balanced and carefully co-ordinated course of study. It will be the policy of the School to have its students concentrate upon subjects which deal with or are closely allied to the science of business administration. With this in view, the system of the older European universities will be followed. The students will be given a thorough training in the forces which influence business enterprise. The School will not attempt to prepare men for specific positions, because with the scientific training given them they can ad-



just themselves to their new environment within a short time; however, a study will be made of the aptitudes and ability of individual students in order to direct them into channels of business where they will be most useful.

## BUSINESS EXPERIENCE

Each student is required to do forty-five weeks of practical work in some commercial or industrial establishment before the degree is granted. The schedule will be so arranged that this requirement can be met during the summer vacations. The Employment Bureau of the School will place the men in positions and co-operate with the employers in measuring the success of the students in the practical work.

## METHOD OF INSTRUCTION

Problems are presented to the class for discussion. Then the instructor sums up his conclusions. In this way, the students are given a practical application of the principles involved. The instructor ties up each new subject with what has gone before so that the students get the proper and logical sequence.

In addition to the class work, problems and readings are assigned for outside study. Each student prepares a solution of problems assigned and presents them for criticism.

## ENGLISH

While only one full course will be devoted strictly to the study of English, the subject is so important that it will be considered an integral part of each course. The student must be able to express himself clearly and concisely. Work which does not meet this requirement will be considered unsatisfactory.

## COURSES OF INSTRUCTION

During the first year, all students will be required to take the following courses:

Accounting	Fundamentals of Business
Business Law	Administration
English	Resources and Industries
Field Trips	Current Business Periodicals

In addition, the following courses will be required during the second, third and fourth years:

Marketing	Business Statistics
Economic History	Factory Administration
Industrial Finance	Economic Theory
Government	Business Problems

Thus, thirteen of the twenty full courses required for the degree are necessary to give the student a foundation in the basic principles of business. The remaining seven courses are built into a curriculum which will give the student training in the general field of business which he desires to enter. Programs which illustrate the method of curriculum building are outlined below.

## GENERAL BUSINESS

### *Second Year*

Marketing	Advanced Accounting
Economic History	Advanced Business Law
Industrial Finance	Current Business Periodicals

### *Third Year*

Government	Factory Administration
Business Statistics	Banking
Foreign Trade	

## *First Year*

Economic Theory	Distribution Management
Purchasing and Commercial Crises*	Business Problems
	Transportation

## INDUSTRIAL MANAGEMENT

### *Second Year*

Marketing	Advanced Accounting
Economic History	Transportation
Industrial Finance	Current Business Periodicals

### *Third Year*

Government	Factory Administration
Business Statistics	System Building and Cost
Corporation Finance and Investments	Accounting**

### *Fourth Year*

Economic Theory	Purchasing and Commercial
Business Problems	Crises*
Factory Problems and Industrial Relations*	Advertising and Traffic Management**

## MARKETING

### *Second Year*

Marketing	Transportation
Economic History	Factory Administration
Industrial Finance	Current Business Periodicals

### *Third Year*

Government	Advertising and Retailing**
Business Statistics	Banking
Distribution Management	

\* Half courses.

\*\* Given in the evening school of Commerce and Finance; each one evening a week.

Economic Theory  
Business Problems  
Traffic Management  
and Credit\*\*

ear  
Purchasing and Commercial  
Crises\*  
Foreign Trade

## FINANCE

### *Second Year*

Marketing  
Economic History  
Industrial Finance

Advanced Accounting  
Advanced Business Law  
Current Business Periodicals

### *Third Year*

Government  
Business Statistics  
Foreign Trade

Factory Administration  
Banking

### *Fourth Year*

Economic Theory  
Business Problems  
Foreign Exchange and  
Commercial Crises\*

Corporation Finance and  
Investments  
Advertising and System  
Building\*\*

## COMMERCIAL AND INDUSTRIAL ACCOUNTING

### *Second Year*

Marketing  
Economic History  
Industrial Finance

Advanced Accounting  
Advanced Business Law  
Current Business Periodicals

### *Third Year*

Government  
Business Statistics  
Factory Administration

Banking  
Cost Accounting and System  
Building\*\*

\* Half Courses.

\*\* Given in the Evening School of Commerce and Finance; each one evening a week.

*For First Year*

Economic Theory	Purchasing and Commercial
Business Problems	Crises*
Corporation Finance and Investments	Transportation

PROFESSIONAL ACCOUNTING

*Second Year*

Marketing	Advanced Accounting
Economic History	Advanced Business Law
Industrial Finance	Current Business Periodicals

*Third Year*

Government	Factory Administration
Business Statistics	Advanced Accounting Problems and System Building**
Banking	

*Fourth Year*

Economic Theory	Corporation Finance and
Business Problems	Investments
Cost Accounting and Auditing**	Purchasing and Commercial Crises*

SPECIAL TWO-YEAR CURRICULUM

The two-year curriculum, leading to the Certificate of Proficiency, is planned for men who want a short intensive training. Such students must meet the entrance requirements of candidates for the degree and will take the following courses:

\* Half Courses.

\*\* Given in the Evening School of Commerce and Finance; each one evening a week.

### *First Year*

Accounting	Fundamentals of Business
Business Law	Administration
English	Resources and Industries
Field Trips	Current Periodicals

### *Second Year*

Advanced Accounting	Advanced Business Law
Marketing	Industrial Finance
Factory Administration	Current Business Periodicals

## DESCRIPTION OF COURSES

*Accounting* Two hours' recitation and two hours' laboratory practice each week throughout the year.

This course is given over to the development of the principles of accounting. The laboratory work consists in making entries of business transactions in the books of account. At first, simple transactions are handled by the students. Then they proceed to master the technique of accounting involved in various forms of business enterprise, such as the partnership and corporation. The recitations are given over to the interpretation of the facts that lie behind the figures.

*Business Law* Three hours each week throughout the year.

This course deals with the fundamental principles of law, which relate to business organization and conduct. During the first year, contracts, agency, and sales will be considered.

*English* Three hours each week throughout the year.

This course is intended to give the students a knowledge of the principles of rhetoric and the forms of discourse, which they can apply in developing business reports.

*Fundamentals of Business Administration*      Three hours each week throughout the year.

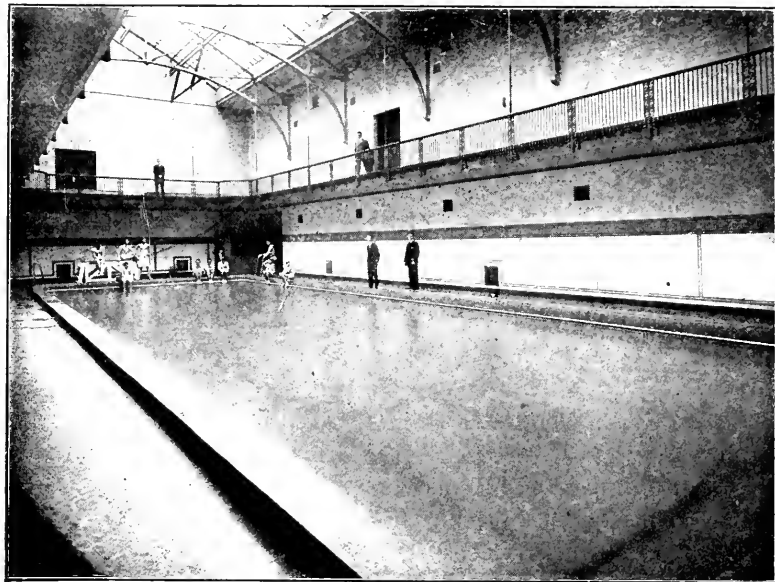
This course is intended to give the student an introduction to the general field of business administration. In addition, it will be closely tied up with the principles of economics. Students will be assigned Marshall's "Business Administration" and Taussig's "Principles of Economics" for outside study. Through class discussion, the instructor will tie up the theory and applied principles.

*Resources and Industries*      Three hours each week throughout the year.

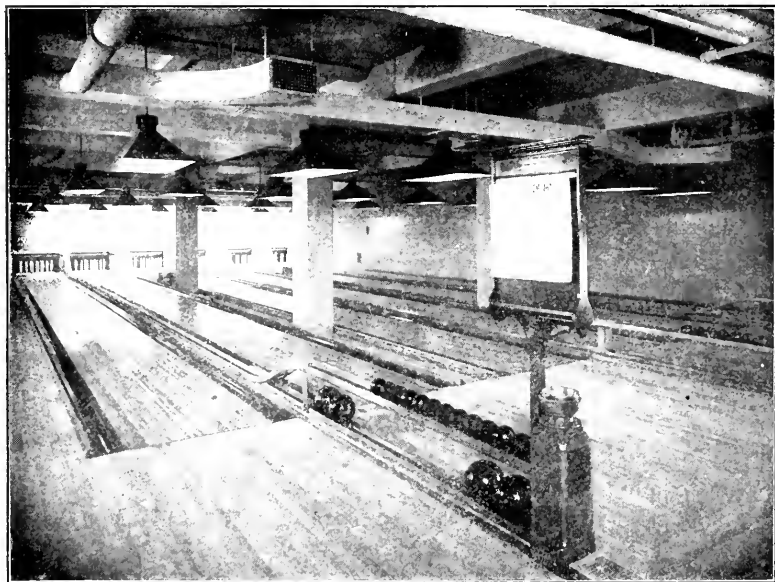
A study is made of the economic resources and industries of the leading countries, with particular attention to the United States. Emphasis will be laid upon natural resources and their relation to the industries arising therefrom. Students will be assigned reports, which will be graded from the point of view of the English structure as well as the contents. Some of these reports will be based upon readings; others, will be based upon visits to industrial plants. The field trips will be combined with this course.

*Current Business Periodicals*      One hour each week throughout the year.

The purpose of this course is to acquaint the student with the current business literature.



SWIMMING POOL



BOWLING ALLEY



# GENERAL INFORMATION

## ADMISSION REQUIREMENTS

*Regular Students* Regular students must meet one of the following admission requirements: They must present certificates showing graduation from an approved high school or school of equal grade, or they must present certificates showing the completion of fifteen units of work in such schools, or they must pass the entrance examination in June or September, covering fifteen units of secondary school work. In addition, they must pass satisfactorily the Thorndike Test of General Intelligence for admission to colleges or professional schools.

*Special Students* Special students must be at least twenty-one years of age, must have had business experience, and must pass satisfactorily the Thorndike Intelligence Test. Only a very limited number of special students will be accepted in any one year. Special students cannot become candidates for the degree.

*Part-Time Students* Regular students will be permitted, under exceptional circumstances, to take less than the complete program of five full courses. Such work as is taken on a part-time basis will be credited toward meeting the requirements for the degree.

*Advanced Standing* Students who have pursued regular courses of instruction in a school of business administration of a recognized college or university may receive advanced standing, not exceeding three years' credit, by presenting a certificate showing the work completed.

## REQUIREMENTS FOR DEGREES

*The Bachelor of Commercial Science*      A candidate for the Bachelor's degree must complete the term work in twenty full courses and pass the final examinations in each of these courses with a grade of not less than 70%.

Each candidate for the degree must have had at least forty-five weeks' business experience before the degree is granted. The student should be able to meet this requirement during the three summer vacations.

*The Master of Commercial Science*      (Administered through the Evening School of Commerce and Finance at present.)

1. (a) Graduates of school of commerce and finance of recognized colleges and universities must complete twelve semester courses with a grade of 85%.
- (b) Graduates of colleges of liberal arts and scientific schools must complete eighteen semester courses with a grade of 85%.
2. They must carry on research and present the result in thesis form. The thesis must be satisfactory to a Board of Examiners appointed by the Dean.
3. They must pass an oral examination in their special field of research.

## THE CERTIFICATE OF PROFICIENCY

Regular students who have completed the term work and passed the final examinations in ten full courses with a grade of not less than 70% will be granted the Certificate of Proficiency.

Each candidate for the Certificate of Proficiency must have had at least fifteen weeks' business experience before the Certificate is granted. The students should be able to meet this requirement during the vacation between the two years.

## REGISTRATION

Students are required to register and fill out their program cards at the beginning of each semester.

Credentials of work completed before entering the school must be presented to the Registrar by all candidates for degrees at the time of registration.

## FEES

Students are required to pay a fee of \$5.00 when they make application for admission. The tuition fee is \$250.00 per year, which includes instruction and membership in the Y. M. C. A. The tuition fee is payable in advance in four installments: September 25, November 15, January 25, April 1.

## REFUNDS

Students who are forced to withdraw should notify the Dean immediately.

Refunds are subject to the following rules:

1. Applications must be presented within sixty days after withdrawal.
2. The unused portion of the tuition may be placed in suspense and used at some future time to apply upon the tuition of any School in Northeastern University, provided that the credit be used within two years.

3. Cash refunds are granted only in cases where students are compelled to withdraw on account of personal illness. Such applications must be accompanied by a certificate from a physician.

## THE SCHOOL YEAR

The school year is divided into two semesters of sixteen weeks each, exclusive of vacations, mid-year and final examinations. Three recitations are held weekly in each course. Two hours' laboratory work is equivalent to one hour's recitation.

## REPORTS

Reports of the students' progress are issued four times a year; the first of December, February, April and June.

## GRADES

The following system of grading has been adopted by the School:

A	90-100
B	80-89
C	70-79
D	Condition
E	Failure—the course must be repeated

## ATTENDANCE REQUIREMENTS

Students are allowed six unexcused absences in each semester course. Excuses for absences on account of illness should be countersigned by a physician and left at the school office. Five per cent will be deducted from the original grade in a course for each unexcused absence over six.

Students who are more than five minutes late in entering a class or who leave five minutes early will be marked absent.

## EXAMINATIONS

Mid-year examinations will be given in all courses during the week following the close of the first semester; final examinations, during the two weeks following the close of the second semester. All the term work in a course must be completed before the student is allowed to take the mid-year or final examination.

## RE-EXAMINATIONS

Students, who fail in a mid-year examination, will be allowed a re-examination in April; those who fail in a final examination, in September. If they fail in a re-examination, they must repeat the course; if they pass, the final grade will be 70%. A re-examination cannot be taken to raise a grade.

## CLASSIFICATION

To be classified as a Sophomore, a student must have credit for four full courses; a Junior, nine full courses; and a Senior fourteen full courses.

## EMPLOYMENT BUREAU

Through its Employment Bureau, the Evening School of Commerce and Finance keeps graduates and undergraduates in contact with openings in business. A study is made of the nature of the position and a student selected who will fill that position competently. In connection with this Bureau, the director will make a study of the aptitudes of

the students in the School of Business Administration so that he will be able to advise them to follow the vocation for which they are best adapted.

## THE LIBRARY

The library contains the necessary books on business administration and allied subjects, as well as a well-balanced group of reference books. Current business periodicals and the leading business services are provided for the use of students. The Reading Room is open from 9:00 a. m. to 10:00 p. m. each day. Students also have opportunity to make use of the Boston Public Library, only a few steps from the Y. M. C. A. Building.

## BUILDINGS AND EQUIPMENT

The School is housed in the finest buildings of their kind in America. They contain thirty classrooms, chemical, physical, electrical and manual arts laboratories well provided with modern apparatus for carrying on school work; an assembly hall, which seats five hundred, with a large stage suitably equipped for theatricals and entertainments; a gymnasium, one hundred eighty-eight by seventy-two feet, encircled by a running track of twelve laps to the mile; swimming pool, seventy-five by twenty-five feet, under a glass roof admitting floods of light and sunshine; game rooms, libraries, offices, clubrooms, and dining room.

Adjoining the building is the athletic field, with its tennis courts, running tracks and means for other outdoor sports.

Ample provision is made to carry on in the most effective way all the activities of the School.

# NORTHEASTERN UNIVERSITY

## DAY SCHOOLS

### SCHOOL OF ENGINEERING

Four-year courses in Civil, Mechanical, Electrical, Chemical, and Administrative Engineering, leading to the degrees of Bachelor of Civil, Mechanical, Electrical, and Chemical Engineering. The School is conducted in co-operation with engineering firms. Students earn while learning. Open to high school graduates. Work conducted at Boston.

### SCHOOL OF BUSINESS ADMINISTRATION

Four-year course in Business Administration leading to the degree of Bachelor of Commercial Science. Students may specialize in Industrial Management, Marketing, Finance, and Accounting. A two-year course leading to the Certificate of Proficiency is also offered. Open to high school graduates. Work conducted at Boston.

## EVENING SCHOOLS

### SCHOOL OF LAW

*(Co-Educational)*

Four-year course leading to the degree of Bachelor of Laws. Case method of instruction. High scholastic standards. Open to high school graduates or those with equivalent education. A limited number of men and women of maturity and experience admitted each year as special students, not candidates for the LL.B. degree. Work conducted at Boston, and in Divisions at Worcester, Springfield, and Providence.

## SCHOOL OF COMMERCE AND FINANCE

*(Co-Educational)*

Four-year courses in Professional Accounting and Business Administration leading to the degrees of Bachelor and Master of Commercial Science. Special two-year courses for students who desire to specialize in a particular field. Open to high school graduates or those with equivalent education. Work conducted at Boston, and in the Divisions and Branches at Worcester, Springfield, Providence, Bridgeport, New Haven, Lynn, Cambridge, Malden, and Newton.

## EVENING POLYTECHNIC SCHOOL

Three-year courses in Civil, Mechanical, Electrical, Chemical, Structural, Industrial, and Automotive Engineering leading to a diploma. The school trains men for positions of trust and responsibility. Work conducted at Boston, and in the Divisions at Worcester, Springfield, New Haven, and Bridgeport. (The school in Worcester is known as the "Evening School of Applied Science.")

## NORTHEASTERN PREPARATORY SCHOOL

Courses in usual high school subjects leading to a diploma. Three sixteen-week terms each year. It is possible for students to meet college-entrance requirements in from three to five years. Work conducted at Boston and in Divisions at Worcester and New Haven.

## VOCATIONAL INSTITUTE

A diversified program of short intensive courses including all phases of the automotive industry with special instruction for owners, salesmen, mechanics, and chauffeurs.



## DEPARTMENT OF UNIVERSITY EXTENSION

Home Study courses in co-operation with the United Y. M. C. A. Schools. Classes in public speaking, salesmanship, accounting, economics, and other subjects organized and lectures conducted in cities and towns throughout New England. Classes for employees conducted in co-operation with leading corporations and business concerns.

For further information concerning any of the above schools, address

### NORTHEASTERN UNIVERSITY

316 Huntington Avenue  
Boston 17, Massachusetts  
or the nearest division or branch

SPARTAN PRESS INC.  
146 OLIVER ST.  
BOSTON





# Northeastern University

## SCHOOL OF LAW

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TWENTY-FIFTH YEAR

1922 • 1923



**BOSTON YOUNG MEN'S CHRISTIAN ASSOCIATION**

**316 Huntington Avenue  
BOSTON, MASSACHUSETTS**

# NORTHEASTERN UNIVERSITY

## *Day School*

### *School of Engineering*

Four-year courses in Civil, Mechanical, Electrical, Chemical, and Administrative Engineering, leading to the degrees of Bachelor of Civil, Mechanical, Electrical, and Chemical Engineering. Conducted in co-operation with engineering firms. Students earn while learning. Work conducted at Boston.

### *School of Business Administration*

Four-year course in Business Administration leading to the degree of Bachelor of Commercial Science. Students may specialize in Industrial Management, Marketing, Finance, and Accounting. A two-year course leading to the Certificate of Proficiency. Work conducted at Boston.

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## *Evening Schools*

### *School of Law*

(Co-educational)

Four-year course leading to the degree of Bachelor of Laws. Preparation for Bar Examination and practice. High scholastic standards. A limited number of mature special students admitted each year. Work conducted at Boston, and in Divisions at Worcester, Springfield, and Providence.

### *School of Commerce and Finance*

(Co-educational)

Four-year courses in Professional Accounting and Business Administration leading to the degrees of Bachelor and Master of Commercial Science. Special two-year courses for those desiring intensive specialization. Work conducted at Boston, and in the Divisions and Branches at Worcester, Springfield, Providence, Bridgeport, New Haven, Lynn, Malden, and Newton.

### *Evening Polytechnic School*

Three-year courses in Civil, Mechanical, Electrical, Chemical, Structural, Industrial, and Automotive Engineering leading to a diploma. Work conducted at Boston, and in the Divisions at Worcester, Springfield, New Haven, and Bridgeport. (The school in Worcester is known as the "Evening School of Applied Science.")

### *Northeastern Preparatory School*

Courses in usual high school subjects leading to a diploma. Three sixteen-week terms each year. It is possible for students to meet college-entrance requirements in from three to five years. Work conducted at Boston and in Divisions at Worcester and New Haven.

### *Vocational Institute*

A diversified program of short intensive courses including all phases of Automotive industry with special instruction for owners, salesmen, mechanics, and chauffeurs.

### *Department of University Extension*

Home Study courses in co-operation with the United Y. M. C. A. Schools. Classes organized and lectures conducted in cities and towns throughout New England, and in co-operation with leading corporations and business concerns. Divisions and Branches operated in connection with this Department.

For further information concerning any of the above schools, address

NORTHEASTERN UNIVERSITY

316 Huntington Avenue, Boston, Massachusetts,  
or nearest division or branch.

# Northeastern University

## SCHOOL OF LAW

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1922 - - - - 1923



*Effective Methods of Instruction*  
*High Scholastic Standards*  
*Sound Professional Ideals*

Northeastern University of the Boston Young Men's Christian Association is incorporated under the laws of Massachusetts and is located in Boston. Divisions are conducted at Worcester, Springfield, Bridgeport, Providence, and New Haven, and branches in Lynn, Cambridge, Malden, and Newton.

# *Calendar*

1922	September 6	Registration Commences
	September 6	Senior Class Lectures Begin
	September 11-15	Entrance and Condition Examinations
	September 25	Other Class Lectures Begin
	September 25	Payment of first instalment of tuition due
	October 12	Columbus Day
	November 15	Payment of second instalment of tuition due
	November 23	Thanksgiving Day
	December 23 to January 1 both dates inclusive	Christmas Recess
1923	January 15	Payment of last instalment of tuition due
	February 22	Washington's Birthday
	April 19	Patriots' Day (in Massachusetts)
	May 30	Memorial Day
	June 17	Baccalaureate Address
	June 20	Commencement

## *Condition Examinations, 1922*

Monday,	Sept. 11	Criminal Law, Property I, Corporations
Tuesday,	Sept. 12	Torts, Equity I, Property II (Deeds)
Wednesday,	Sept. 13	Agency, Civil Procedure at Common Law, Partnership
Thursday,	Sept. 14	Contracts, Bills and Notes, Equity II
Friday,	Sept. 15	Sales, Wills

Examinations must be taken at the time scheduled, as no special examinations will be given.



# Northeastern University

of the

BOSTON YOUNG MEN'S CHRISTIAN ASSOCIATION

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# Northeastern University

## *Historical Sketch*

The incorporation of Northeastern University of the Boston Young Men's Christian Association in March, 1916, marked the culmination of a notable development. The University is not a new institution, but a realization of an ideal carefully worked out and persistently followed for a period of many years. The Boston Young Men's Christian Association, established in 1851, had as one of its first lines of endeavor evening classes for young men.

It was not, however, until 1896 that the evening school system was placed upon a permanent basis with expert supervision. As courses were being offered in increasingly large numbers, it became evident that a more complete organization should be effected, with the result that the courses were grouped as separate schools, such additional courses being offered as would complete the curriculums of the several schools. The School of Law, established in 1898, was incorporated in 1904 with degree granting power. The School of Commerce and Finance, founded in 1907, was incorporated in 1911, and was given the right by the State to grant the Bachelor and Master of Commercial Science Degrees in the same year. The School of Engineering was opened in 1909, and received in 1920 the right to grant the following degrees: Bachelor of Chemical Engineering, Bachelor of Mechanical Engineering, Bachelor of Electrical Engineering, and Bachelor of Civil Engineering. Affiliated with the University are the Evening Polytechnic School, the Huntington School for Boys, and the Northeastern Preparatory School. Divisions of the University have been established at Worcester, Springfield, Bridgeport, New Haven, and Providence, offering the four-year courses of one or more of the following schools: School of Law, School of Commerce and Finance, Evening Polytechnic School; branches have been established at Lynn, Cambridge, Malden, and Newton, offering one or two years of the School of Commerce and Finance.

To more closely co-ordinate the work of the Divisions and Branches throughout New England with the work at Boston, a Regional Committee was organized May 5, 1920, for the purpose of "promoting, financing, supervising, and developing Divisions and Branches of Northeastern University." This committee is organized so as to insure the most effective and uniform service to all.

# *The School of Law*

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## *The Study of Law*

With the growing complexity of American civilization due to an unparalleled development in commerce and industry has come an increased demand for men who are well trained in the law and who combine with the knowledge of law the highest type of ideals and the best legal ethics.

The law treats of nearly every phase of human relationship. It prepares a student to deal effectively with men and affairs; it trains him to think, to think straight, to think a proposition through to the end and then to act in accordance with judgment based on a clean-cut, unbiased analysis of the facts. This habit of analytical thinking and judicial action is indispensable to the practitioner of law. It is equally indispensable to business men, those in political life, and to all who would render the most efficient service to society.

A large number of the most successful men in nearly every field of activity have had a training in law; and the demand for such men is constantly increasing and will continue to increase with the economic and social evolution of the country.

Law Schools have rendered an inestimable service in the past; they will render an even greater service in the future. From the law schools of to-day must come the leaders of to-morrow. Justice is the keystone of the arch of modern civilization—the lawyer, as an officer of justice, is charged with the preservation and maintenance of all that is true and noble in human society.

“Above all, a lawyer will find his highest honor in a deserved reputation for scrupulous fidelity to private trust and public duty, with the vigor and openness of an honest man and a patriotic and loyal citizen.” (Canon of Professional Ethics, Massachusetts Bar Examination.) Law Schools must devote themselves to training lawyers who, either in the profession or in other fields of activity, will be efficient and effective in the actual business in which they are engaged, and who will have as ideals in their work justice and service to mankind.



## *Historical Review*

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### *The Founding of the School*

Massachusetts has maintained for a considerable period of time two of the most prominent day law schools in America—the Harvard University School of Law and Boston University School of Law. These schools, however, were not, and have not been able to reach a very large group of highly intelligent and ambitious employed men who desire advancement either through preparing for the legal profession or through a law training which might be applicable in their business careers. Prior to 1898 there was a persistent demand for an evening law school which should be thorough in its instruction and conducted in such a manner that its graduates would stand well at the bar and be recognized as men of professional attainment and ethical standards. In response to this demand Northeastern University School of Law was established in 1898 through the co-operation and under the active guidance of the late Hon. James R. Dunbar, the late Prof. James Barr Ames, Dean of the Harvard University Law School, and Mr. Samuel Bennett, then Dean of the Boston University School of Law.

Divisions of the Northeastern University School of Law have been established as indicated below. The nature and quality of work offered in these divisions is the same as that offered in Boston—the work being under the same supervision and administration as the Boston work. Each division will eventually offer a full four-year program.

From the outset the Worcester Division of the Law School admitted women to its classes. Springfield, in 1921, decided to admit women, effective with the entering class of September of that year. In January, 1922, the trustees of Northeastern University, acting upon the recommendations of the corporation of the School of Law, voted to admit women to the school in Boston and in all of the Divisions, subject, so far as the Divisions were concerned, to the approval of the local boards. This step of the trustees was taken after very careful consideration of the points involved, acting upon the advice of leading legal educators and upon the basis of a persistent demand that women be admitted to the school and upon the experience of outstanding law schools in co-education: it being found that, with the exception of

Harvard and Columbia, where women have not been admitted, all of the leading law schools of the country are admitting women, with excellent results, to their classes and in full candidacy for their degrees. In view of the fact that classes in the school are already as large as are desirable, only a limited number of mature women who are especially qualified by experience and training to pursue a law course will be admitted to the school each year.

### *Worcester Division*

In April, 1919, the Worcester Division School of Law was officially established and formally announced. Classes did not commence, however, until September of the same year. An Advisory Committee has been of material assistance in guiding the affairs of the School locally and in the selection of the Faculty. The response on the part of the public to the opening of the Worcester Division is best evidenced by the enrollment during the past three years. The entire four-year program is offered during 1922-23. Since the opening of the School in Worcester, women have been admitted as regular students and have made a creditable record in the school.

### *Springfield Division*

The Springfield Division of the School of Law, established in May, 1919, was the second division of the School to be formed. The late Chief Justice Marcus P. Knowlton expressed a great interest in the founding of the Springfield Division when the matter was first proposed in 1915, but, with the coming of the war, plans had to be postponed. The Advisory Committee has been of much assistance in the establishing of this Division and in the selection of the Faculty. Springfield and vicinity have given splendid support to this Division as is indicated by the student body. The complete curriculum will be given this year. Women are admitted as regular students.

### *Providence Division*

At a meeting held in Providence early in May, 1920, a group of the leading members of the Rhode Island Bar requested the Directors of the Providence Y.M.C.A. to consider the establishment of a division

of Northeastern University School of Law in Providence. This meeting was followed two weeks later by a more representative gathering of the Bar at which the request was repeated. Steps were immediately taken by the Y.M.C.A. to meet this request and in October, 1920, the Providence Division School of Law was opened.

Much very helpful assistance and guidance have been given by the Advisory Committee and a very capable Faculty has been secured. During 1922-23 the first three years of the four-year curriculum will be offered. The complete curriculum will be offered in 1923-24. Women are not admitted to this Division.

The following resolution was adopted by the Board of Directors of the Providence Chamber of Commerce on May 13, 1920: "Resolved, that the Committee of 100 of The Providence Chamber of Commerce welcomes the establishment of a Branch of Northeastern University in the City of Providence, believing it gives an additional opportunity for the education of employed men."

## *The Organization of the School*

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From the outset the school developed around the following basic principles:

1. A non-proprietary evening law school with high scholastic standards—devoting all of its resources to building up the best type of evening law school.

2. The case method as a basis of instruction: supplemented by lectures and review quizzes.

3. A Faculty made up of men who are graduates of the best law schools, who have achieved success in the legal profession, and each of whom possesses, further, the qualifications of a teacher.

4. A sound course of study.

5. High professional ethics and a preparation for the legal profession, not only in a narrow sense, but in the broader sense of service to mankind.

6. Impartial administration—whereby the rules relating to attendance, grading, examinations and scholarship are impartially enforced.

It is a matter of experience on the part of Northeastern University School of Law that the principles enumerated above can be complied with on the part of evening law schools and must be complied with by this type of school; provided the work of these schools is to have any warrant for continuance. An evening law school, such as Northeastern University, which carefully selects its Faculty and its student body, organizes a sound course of study, and insists upon the highest possible ethical standards, can be of incalculable value to society through the training of men who will become efficient leaders. With the tendency from a republican representative form of government to a democratic form of government, in which the people are directly responsible, it is more than ever imperative that men be trained who are capable of the highest type of efficient leadership. It is to this ideal that evening law schools should consecrate their efforts and it is this ideal to which Northeastern University has consecrated its efforts.

## *Successful Career*

The School has proved to be a success. Approximately four thousand five hundred students have been enrolled, including clerks from the offices of leading attorneys; clerks and officers from every court in Boston; state, city, and government officials; teachers and students from other law schools; and a large number of able men engaged in different lines of business. About 84% of the graduates have passed the bar examinations in Massachusetts, or in other states, and of the remaining 16%, a very considerable number are business or professional men who have not intended to enter upon the practice of Law and, for that reason, have not attempted the bar examinations.

Various reports, alumni letters and other sources of information evidence the fact that those who have completed the required course of study have profited immeasurably by the training they have received.

## *Incorporation*

In January, 1904, a bill was introduced into the Massachusetts Legislature seeking the incorporation of the School, with the power to grant the degree of Bachelor of Laws. The rapid passage of this bill by the legislature, and the cordial recognition and endorsement of the School by the bench, the bar, and the heads of our day law and other professional schools, testify in no uncertain terms to the position the School occupies in the educational activities of the Commonwealth.

## *The Student Body*

Four general groups of men are pursuing the prescribed course in the school of law:

1. Men who are preparing for the legal profession.
2. Men who are studying law as a means of a more efficient functioning in business. With the increased complexity of business organization due to large scale marketing, large scale production, and the development of means of communication in the form of railroads, and telephone and telegraph, it is certain that no training can be of greater value to business executives than a training in law.

3. Students who are uncertain as to their life work and are taking the law as a "finding" course. The study of law, because it deals with practically every field of human relationship, is an excellent means by which a young man can analyze himself and come to a definite decision concerning his life work.

4. A comparatively large number of our students are taking the study of law for informational and cultural reasons.

The student body is drawn mostly from business and professional men, although almost every vocation is represented. For the most part the men are relatively mature—a recent survey showed 29.8% of the student body to be over 30 years of age and 51.7% of the student body 26 years or older. The contacts with one another of students from various fields of activities and of widely ranging ages is of considerable value as an aid to the development of those personal qualities which tend to make for social efficiency. Over 34% of the students have had at least one year of college work prior to entering the school—by far the larger number of these college men having received degrees.

It is felt that the admission of women, effective September, 1922 (except in the Providence Division), will add a valuable element to the student body and will furnish opportunities for law study to a group of highly efficient women who desire personal advancement and a life of professional service. The success of women students in the leading law schools of the country, with the exception of Harvard and Columbia where they have never been admitted, is such as to leave no room for doubt as to the advisability of admitting them to the study of law. Universal suffrage and the consequent opening up to women of various public offices have made it more than ever desirable that women be permitted to enter upon the study of law in preparation for more efficient community and political leadership and for active professional practice.

### *Method of Instruction*

There are three methods of instruction employed by law schools: The lecture method, in which the instructor gives a presentation exercise and assigns cases to be read in relation thereto; the case method, in which cases are assigned to be read in advance, and later discussed

and commented upon in class; and a combination of these two systems, in which the instructor's lecture or presentation of the essentials is followed by the discussion of cases previously read.

Twenty-four years' experience has led the School of Law to adopt a modification of the third method, namely: Lecture, or citation, and discussion, supplemented with written tests and systematic quizzes. The value of this method is clearly demonstrated by the success of our students at the bar examinations and later in practice.

### *The Faculty*

The success of the law school can be attributed, in large measure to two factors: First, to impartial administration whereby the rules relating to attendance, grading, examinations, and scholarship are strictly and impartially enforced; and second, to the faculty, which is made up of men, many of whom have graduated from their respective law schools with scholastic honors, and all of whom have been pre-eminently successful in the legal profession. The contact of the students with practising attorneys of broad experience, liberal training, and high ethical and professional standards has proved of inestimable value; and has resulted in the development of a school which has been to the highest degree successful.

## *Admission Requirements*

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The following admission requirements to the School of Law will be effective with the incoming freshman class of September, 1922:

1. The applicant must be at least eighteen years of age.
2. The applicant must be of good moral character.
3. A student entering as a candidate for the LL.B. degree must furnish satisfactory credentials showing that:
  - a. He is a graduate of an approved high school, or a school of equal grade,  
or,
  - b. He is a graduate of an institution of recognized collegiate grade,  
or,
  - c. He has completed satisfactorily fifteen units of secondary school work in an approved high school or in a school of equal grade,  
or,
  - d. He must pass satisfactorily entrance examinations covering fifteen units of secondary school work,  
or,
  - e. If a man of maturity and with business experience, he must pass a Thorndike test of general intelligence for admission to colleges and professional schools with a score which indicates the general intelligence expected of high school graduates. Such men must also present certificates or pass examinations showing the completion of eight units of secondary school work before being eligible for the LL.B. degree.
4. A limited number of special students, not candidates for the degree, may be admitted to the school at the discretion of the Committee on Admission and the Dean. Such students must furnish satisfactory evidence of maturity and of ability to pursue a law course.

The attention of men who, because of previous education, cannot enter the law school as regular students in candidacy for the LL.B. Degree is directed to the following rules of the Bar Examiners of Massachusetts:



(a) "All applicants who are graduates of a college, or who have complied with the entrance requirements of a college, or who have fulfilled for two years the requirements of a day or evening high school or a school of equal grade, or who have an education equivalent thereto, shall, so far as their general education is concerned be deemed qualified to be admitted to the Bar, and shall be considered eligible to take the regular law examinations."

(b) "The rule of the board as to term of study of the law will be satisfied by . . . . . four years' study in any approved evening law school having a four years' course. . . ." By this rule an applicant need not be a graduate of an evening law school—four years' study being sufficient to meet the Bar requirements in Massachusetts.

In view of the above rules of the Massachusetts Bar Examiners, men who possess maturity, experience, and general fitness for the legal profession may enter upon the study of law and meet the bar requirements, even though they do not possess educational qualifications required of students who are candidates for the LL.B. Degree. Such special students as are admitted to the school will be furnished certificates of completion showing the courses which they have pursued and the grades which they have attained while members of the school.

The admission requirements outlined above do not apply to men who entered the school prior to September, 1921—the former admission requirements holding in such instances. Men who are students in the school under the old admission requirements will not be allowed to enter the Senior Class of the Law School with any academic conditions, except by special permission of the School authorities; request for such permission should be made promptly and in writing.

5. Women will be admitted as candidates for the LL.B. degree subject to the same conditions as men, that is, to the admission requirements as outlined above. A limited number of women may be admitted as special students, not candidates for the LL.B. degree, under the conditions outlined in paragraph four.

(This does not apply to the Providence Division where women will not be admitted.)

## *Advanced Standing*

Candidates for admission to advanced standing will file their applications and credentials regarding previous study of law with the Dean. After due consideration of the standing of the school and the nature and extent of the applicant's attendance and scholarship thereat, the School authorities will apprise the applicant of his status as a student upon entering the Law School.

One or two years' attendance at an accredited three-year day law school may be counted as a part of the required four-year period of school attendance.

# *Tuition and Other Fees*

## *Freshman Year*

### Application fees:

Payable on filing application for admission . . . \$5.00

### Tuition fees:

On entrance to School . . . . . \$35.00

November 15 . . . . . 30.00

January 15 . . . . . 30.00

Total . . . . . 95.00

Total . . . . . \$100.00

## *Sophomore Year*

### Tuition fees:

At opening of School . . . . . \$35.00

November 15 . . . . . 30.00

January 15 . . . . . 30.00

Total . . . . . \$95.00

## *Junior Year*

### Tuition fees:

At opening of School . . . . . \$35.00

November 15 . . . . . 30.00

January 15 . . . . . 30.00

Total . . . . . \$95.00

## *Senior Year*

### Tuition fees:

At opening of School . . . . . \$35.00

November 15 . . . . . 35.00

January 15 . . . . . 30.00

Total . . . . . \$100.00

### *Special Students*

a. Taking regular course of study—rates as above.

b. Taking a limited number of courses, not equivalent to a full year's schedule:

Application fee.....	\$ 5.00
Eight months' course.....	40.00
Four months' course.....	25.00

### *Students' Reviewing*

Students may be permitted by the Dean to review single courses or a full year's work at one-half of the regular tuition rates. Students who are required to take review work because of failures in previous years are also allowed the privilege of half-rates.

### *In General*

All tuition fees include a limited membership in the Y. M. C. A., or Y. W. C. A., in the case of women.

Men duly enrolled in the school are allowed reduced rates in the case of the gymnasium and natatorium.

The application fee is payable only once, on initial entry to the school.

## *Withdrawals and Refunds*

Students who are forced to withdraw from the School are requested to notify the school office in writing to the effect that they are withdrawing and giving their reasons for doing so. These notifications should be given promptly.

As the School assumes the obligation of carrying the student throughout the year when the student registers, and as the University provides the instruction and accommodations on a yearly basis, the Executive Council of the University has ruled as follows:

A. Applications for refunds must be presented within sixty days after withdrawal from the School.

B. Credits and refunds will be granted only as stated below:

1. The unused portion of the tuition paid by the applicant may be placed in suspense and used at some future time to apply upon the tuition of any school in Northeastern University. This is done provided the reasons set forth in the application meet the approval of the Committee on Refunds, and on the further condition that the credit be used within two years.

2. Cash refunds may be granted only in cases where students are compelled to withdraw on account of personal illness. The application must be accompanied by a satisfactory certificate from the physician.

In the event of withdrawal after initial application for admission has been filed no refundment is made of the five dollar application fee. If a student is forced to withdraw, because of non-acceptance by the School, he will be refunded one-half of the application fee, or two and one-half dollars.

## *Enrollment*

Owing to the delay each year on the part of the students, and the consequent rush on the opening night, those desiring admission are requested to register during the two weeks previous to the opening of the School.

For the application blanks for admission to the School, or for further information, address the Registrar of the Law School.

It is of the greatest importance that students attend the lectures from the opening night and receive credit therefor. In order to receive

attendance credit students must enroll and arrange for the payment of their tuition. After the application blanks have been filed in the office of the Law School, letters have to be written and credentials have to be obtained and acted upon before the students' status can be determined. This necessarily requires considerable time. Manifestly, students should not wait for the status reports but should enroll and commence work at the beginning of the school year.

## *Removal of Academic Conditions*

No student will be allowed to enter the Senior Class as a regular student with any academic conditions, except by special permission of the School authorities. Request for such permission should be made promptly and in writing.

## *Law Conditions*

No student who fails to pass the examination of his class will be permitted to continue with the class, except by special permission. Any student who during two successive years shall fail to pass a sufficient number of examinations to enable him, in the opinion of the Committee on Administration, to proceed to a higher class may be dropped from the rolls of the school.

No student who fails on account of law conditions to receive his degree in due course will be permitted, except by special vote of the Faculty, to remove his conditions later than two years after the graduation of his regular class.

## *Attendance Upon Lectures*

1. The student must attend at least one-half of the lectures in a course in order to be permitted to take the examination therein. No exception is made to this rule.

2. If the student attends at least three-fourths of the lectures in a course, he is entitled to take the examination therein and will pass if he attains a grade of 60 per cent.

3. If the student attends between one-half and three-fourths of the lectures in a course, he must furnish satisfactory excuse to the Com-

mittee on Attendance for the absences under three-fourths in order to be permitted to take the examination therein; and, further, he must attain a grade of 70 in order to pass in such examination.

4. A student must have an aggregate attendance of at least two-thirds of all the lectures scheduled for him in a given year in order to be enrolled the year following as a regular student.

5. A student must have an aggregate attendance of at least two-thirds of all the lectures scheduled for him in his entire curriculum in order to qualify in attendance for his degree. No exception is made to this rule.

6. In order to receive credit for attendance at a lecture, a student must be present in the classroom during the entire lecture period, unless, upon satisfactory excuse, his presence for a shorter period is accepted by the Committee on Attendance.

## *Examinations*

One final examination is regularly given in each course at the close thereof.

One make-up examination is regularly given each year in each course, those in Senior subjects in the spring and those in Junior, Sophomore, and Freshmen subjects in September. (See schedule for September, 1922, on page 2.) Moreover, a student may take as a make-up any mid-year or final examination regularly given in the course in which he is conditioned.

A student who fails in the mid-year or final examination in a given course receives credit for only 60% even if he obtains a higher grade in a make-up examination in that course.

If a student, for good cause, does not take the examination given at the close of a course, he will be permitted to take it any time thereafter when an examination in that subject is regularly scheduled; and, since that will be his first examination therein, he will receive full credit for whatever grade he attains.

The receipt of a passing mark in a course precludes a student from another examination therein.

Effective with the condition (make-up) examinations in September, 1921 and thereafter a fee of *two dollars* will be charged for each condi-

tion examination taken by a student. This sum must be paid on or before the date of the examination and no man will be admitted to any condition examination until the fee has been paid in full. Students desiring to take condition examinations should report to the School Office to make necessary payments and to receive admission cards to the examinations. This rule does not apply to men taking, as make-up examinations, the regular examinations given at the close of a course.

In order to be permitted to take an examination in a course, the student must qualify in attendance. (See attendance regulations.)

All examinations must be written in ink.

## *Tests*

A system of tests is maintained whereby one test is regularly given in each course. Ten points are obtainable in the test toward the student's standing in the course in which it is given, the remaining ninety points being obtainable for the work in the regular examination therein.

If a student, for good cause, does not take the test when regularly scheduled he will be permitted to take it any time thereafter when a test in that subject is given; and since that will be his first test therein he will receive full credit for whatever grade he attains.

The receipt of six points in a test in a course precludes a student from another test therein.

If a student receives less than six points in the test given during the progress of a first, second, or third-year course, he will be permitted to take it again when a test in that subject is regularly scheduled; but he will receive credit for only six points, even though he obtains a higher grade.

## *Marks*

For relation between attendance and marks, see pages 24 and 25.

With respect to grade, a student is entitled to a degree if he obtains at least 60% in all courses scheduled in the entire four-year curriculum.



lum or if, failing in one Senior subject, he obtains an average of at least 65% in all courses so scheduled; provided always that his attendance is not such as to require 70% as a passing mark.

It will be noted from the foregoing that attendance affects the student in two ways; viz., (1) in qualifying to take examinations in his respective courses, and (2) in qualifying for the degree.

Once a month each student below 75% attendance in any subject receives from the Recorder a report which shows in detail his attendance situation to date.

The required period of attendance at the School is four years, except for students entering with advanced standing.

A student qualifies for *cum laude* distinction if he obtains an average of at least 80 in all courses scheduled in the entire four-year curriculum.

Grade reports are mailed to the students from the office of the Dean, or of the divisional director in cases of divisional schools.

## *Requirements for the Degree*

In order to qualify for the degree of Bachelor of Laws, a student must meet the following requirements:

Be at least twenty-one years of age at time of receiving the degree.

Fulfill the academic requirements.

Make the required attendance upon lectures.

Obtain the required marks in all courses scheduled for the degree.

*Note.* Candidates for graduation should file their applications in the Law School office not later than February 1st of the year in which they expect to receive their degree.

# *Outline of Courses*

## *FIRST YEAR*

### *Torts*

*(Thirty-two Lectures)*

Definition of tort; theory of liability in tort; distinctions between tort and breach of contract; defences to torts or apparent torts; assignability of right of action in tort; damages; discharge of torts; disability, including responsibility of infants, married women, insane persons, municipal corporations and charities in tort; assault and battery; false imprisonment; trespass to property; slander and libel; slander of title; enticement and seduction; loss of consortium; deceit; infringement of trade-marks; malicious prosecution; negligence.

Bigelow on Torts.

Ames' and Smith's Cases on Torts.

Simpson's Cases on Torts.

Wigmore's Cases on Torts.

### *Contracts*

*(Thirty-two Lectures)*

Offer and acceptance; consideration; performance of, or promise to perform non-contract obligation as consideration; moral obligation as consideration; antecedent act or agreement as consideration; parties to a contract, including aliens, executors and administrators, guardians, infants, insane persons, intoxicated persons and married women; omitting agents, corporations and partners on account of these subjects being given in other courses; contracts under seal, including the form, requisites thereof, delivery and the matter of consideration; rights of beneficiaries under a contract; rights of assignees of a contract; conditional and unconditional contracts; rescission of contracts; damages for breach of contract; illegality; duress; mistake; statute of frauds; quasi-contracts.

Keener's Cases on Contracts, second edition.

## *Criminal Law*

*(Sixteen Lectures)*

Sources of criminal law; the elements of crime; effect of consent, condonation, negligence of person injured, coercion, and necessity; criminal intent; effect of mistake of fact, infancy, insanity, and intoxication; the criminal act; attempts; parties in crimes; assault and battery; mayhem; false imprisonment; abortion; rape; murder and manslaughter; larceny; embezzlement; obtaining property by cheats and false pretenses; receiving stolen property; burglary; arson; forgery; libel; perjury; conspiracy; criminal procedure in Massachusetts.

Mikell's Cases on Criminal Law.

Clark on Criminal Law.

May on Criminal Law.

## *Agency*

*(Sixteen Lectures)*

Capacity of the parties to the relation; creation of the relation; authority of an agent; manner of execution of authority; effect of relation as between principal and agent, between agent and third persons, and between principal and third persons; ratification; duration and termination of the relation.

Wambaugh's Cases on Agency.

Tiffany on Agency.

## *Legal Ethics*

*(Six Lectures)*

The duty of the lawyer to the courts; the defence or prosecution of those accused of crime; adverse influences and conflicting interests; the duty of the lawyer to his client; negotiations with the opposite party; acquiring interest in litigation; the lawyer's fee; contingent fees; the duty of the lawyer to his fellow lawyers; the duty of the lawyer to the adverse party and witnesses; the conduct of the lawyer in court; advertising; the responsibility of the lawyer for litigation; the duty of the lawyer to society at large.

## SECOND YEAR

### *Property I*

(*Thirty-two Lectures*)

Distinction between real and personal property; rights of action based on possession or on ownership; possessory interests in chattels, including bailments, pledges and liens; acquisition of ownership in chattels, including adverse possession, accession, confusion, judgment and gifts; fixtures and emblements.

The feudal system; tenure in land; estates in land, including their creation and methods of conveyance under the feudal system; reversions, remainders and other future estates; joint ownership; disseisin and the remedies therefor; uses and trusts; air; right to lateral support water; profits; easements; licenses; covenants running with the land; rents; waste; public rights in waters and highways.

Bigelow's Cases on Personal Property.

Bigelow's Cases on Rights in Land.

### *Partnership*

(*Sixteen Lectures*)

What constitutes a partnership; a partnership distinguished from other relations; partnership by estoppel; creation of partnership; who may become partners; partnership name; contribution toward capital of partnership; nature of partner's interest in partnership property; transfer of partnership property; effect on partnership property of death of partner; nature, extent and duration of partnership liability; powers of partners, both before and after dissolution; rights and duties of partners inter se; remedies of partner inter se; rights and remedies of creditors; termination of partnerships; limited partnerships.

Gilmore's Cases on Partnership.

### *Equity I*

(*Thirty-two Lectures*)

History, nature, and limits of the jurisdiction; the jury in equity; the maxims; assignments; equitable rights, including accident and

mistake, fraud, notice, estoppel, conversion, adjustment of liabilities; equitable remedies, with particular attention to specific performance and injunctions; reformation and rescission, account, and other pecuniary remedies.

Boke's Cases in Equity Jurisdiction.

Barney's Equity and Its Remedies.

Bispahn's Equity.

## *Bills and Notes*

(*Sixteen Lectures*)

The provisions of the General Laws of Massachusetts, Chapter 107—Negotiable Instruments Law (in Massachusetts only). Formal requisites of negotiable and non-negotiable bills of exchange, checks and notes; obligations and rights of the various parties to such instruments, makers, acceptors, drawers, drawees, payees, indorsers and indorseees; suits upon bills and notes; pleading and defenses, accommodation paper; guaranty and generally of the transfer, indorsement and extinguishment of bills and notes.

General Laws of Massachusetts, Chapter 107 (in Massachusetts only).

Colson's Hufcut on Negotiable Instruments, second edition.

Norton on Bills and Notes, fourth edition.

Brannan's Negotiable Instruments Law, third edition.

## *Sales*

(*Sixteen Lectures*)

Sales and mortgages of personal property; subject matter of sales; when title passes; risk of loss; rights and remedies of seller and buyer in executed, executory and conditional contracts of sale; warranties of title and quality; seller's lien and stoppage *in transitu*; bills of lading and other documents of title; fraud; statute of frauds; factors and recording acts; actions and defenses.

Pamphlet of Sales Act, Massachusetts Acts of 1908, Chapter 237, and of Bills of Lading Act, Massachusetts Acts of 1910, Chapter 214.

Woodward's Cases on Sales.

Tiffany on Sales, second edition.

Williston on Sales, 1909 edition.

Burdick on Sales, third edition, 1913.

## THIRD YEAR

### *Common Law Pleading*

(Sixteen Lectures)

Procedure from the original writ to appeal and review of judgment; how a right may be enforced and a remedy obtained in the courts; venue of actions; forms of actions, local and transitory, real, personal and mixed; original and judicial writs; pleadings, their necessity, uses, forms and rules by which they are governed; the effect of pleadings in conduct and results of the trial; protection of rights of the parties before, during and after trial, and before and after judgment; revision of proceeding, exceptions, appeal and review.

Scott's Cases on Civil Procedure.

### *Equity II and Suretyship*

(Thirty-two Lectures)

Nature and requisites of a trust; a trust distinguished from a debt; constructive and resulting trusts, charitable trusts, etc.; language necessary to create a trust; consideration; the Statutes of Frauds and Wills; subject matter of a trust; the *cestui que* trust; the trustee; nature of the *cestui que* trust's interest; transfer of trust property, rightful and wrongful; extinguishment of a trust; duties of the trustee.

Scott's Cases on Trusts.

Comprising the rights and obligations subsisting among the three parties involved in a suretyship transaction, namely, principal obligor, surety and creditor.

Ames' Cases on Suretyship.

### *Property II*

(Sixteen Lectures)

Acquisition of real property *inter vivos*. Accretion; adverse possession; prescription; form of conveyances at common law; deeds,—description of property granted, boundaries, estates created, incorporeal hereditaments, covenants for title, estoppel by deed, execution, delivery; dedication; examination of titles.

Gray's Cases on Property, Vol. III (second edition).

## *Wills*

*(Sixteen Lectures)*

History of wills; descent of property; kind of wills; testamentary power; who may make a will; what may be given away by a will; who can be beneficiaries under a will; mental capacity to make a will; insanity; lunacy; contract to make a will; form of will; incorporation by reference of outside documents; execution of will, that is, signing, witnessing, publication; mistake; fraud; undue influence; methods of revoking will and effect of same; republication of will; grant of probate and administration; the estate of executor or administrator; legacies; distribution; construction.

Costigan's Cases on Wills.

## *Corporations*

*(Thirty-two Lectures)*

Nature of a corporation; difference between corporation and partnership; distinction between stockholders and corporation; promotion of corporations; formation of corporations; corporations *de jure*; corporations *de facto*; dissolution of corporations; interpretation of charters; powers of a corporation; doctrine of *ultra vires*; liability for torts and crimes; corporation and the state; shares of stock, dividends; rights of stockholders; stockholders' liabilities; voting rights of stockholders; voting trusts; rights and liabilities of directors and officers; rights and remedies of creditors against property of corporation, foreign corporations.

Canfield and Wormser's Cases on Private Corporations.

## *FOURTH YEAR*

### *Evidence*

*(Thirty-two Lectures)*

Judicial notice; judge and jury, or law and fact; burden of proof presumptions; admissions; confessions; principles of exclusion; relevancy; character evidence; hearsay evidence and exceptions thereto, including declarations as to matters of pedigree, matters of public interest, public records, declarations in regular course of business, ac-

count-books, declarations against interest, *res gestæ*, dying declarations, declarations made under oath, declarations showing physical or mental conditions; opinion evidence; best evidence; writings as evidence; examination of witnesses.

Greenleaf on Evidence.

McKelvey on Evidence.

Thayer's Cases on Evidence.

Wilgus's Cases on Evidence.

Wigmore's Cases on Evidence.

### *Property III (first part)\**

(*Sixteen Lectures*)

Conditional and future interests in property, including reversions and remainders; rules against perpetuities; forfeiture and restraints on alienation.

Gray's Cases on Property, Vols. V and VI.

Gray's Rule against Perpetuities.

Gray's Restraints on the Alienation of Property.

### *Property III (second part)\**

(*Sixteen Lectures*)

Mortgages; Landlord and Tenant; Joint Ownership.

Probate Law and Practice.

Jones on Mortgages.

Hall on Landlord and Tenant.

Crocker's Notes on Common Forms.

Fuller's Probate Law.

### *Constitutional Law*

(*Sixteen Lectures*)

Written and unwritten constitutions; history and sources of written constitutions in the United States, state and national; establishing and amending constitutions; distribution of powers between the national and state governments; distribution of powers among the three departments; the judicial department; nature of judicial power;

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\*Property III (first part) and Property III (second part) are treated as entirely separate courses with respect to attendance, examinations, monthly tests, etc.



jurisdiction of the federal government, criminal and civil; express, implied, resulting and inherent powers; functions of administrative officers; citizenship; civil and political rights; the police power; the right of eminent domain; taxation; impairment of contracts, *ex post facto* and retrospective legislation generally; regulation of commerce.

Thayer's Cases on Constitutional Law.

Hall's Cases on Constitutional Law.

Cooley's Principles of Constitutional Law.

McClain's Cases on Constitutional Law.

## *Massachusetts Practice*

(*Eighteen Lectures*)

Courts in Massachusetts and jurisdiction of each; venue of actions, local and transitory; writs, including service of same; arrest on mesne process and on execution; attachment of mesne process and by trustee process; what property is exempt; entry of actions; appearances, non-suit and default; pleadings, including declaration, answers, demurrers, etc.; set-off, recoupment and cross actions; tender; offer of judgment; interrogatories; depositions; masters and auditors; trial; exceptions; motions for new trial; motion to vacate judgment; writs of review, error and *audita querela*; appeals; execution; replevin; summary process to recover land; writ of entry; mechanics' lien; extraordinary writs; Statute of Limitations; equity pleading and practice; probate practice; marriage and divorce.

Buswell and Walcott on Massachusetts Practice.

This course will not be given in the Providence Division.

## *Bankruptcy*

(*Fourteen Lectures*)

History of bankruptcy legislation, state and national; extent and operation of state insolvency laws; who may become a bankrupt; who may be petitioning creditors; acts of bankruptcy, including fraudulent conveyances, preferences and assignments for the benefit of creditors; what property passes to the trustee; dissolution of liens; what claims are provable against the bankrupt's estate; duties and powers of the trustee; duties of the bankrupt; discharge from bankruptcy; composi-

tions in the bankruptcy court; bankruptcy procedure.

United States Bankruptcy Act of 1898, with amendments.

Williston's Cases on Bankruptcy, second edition.

### *Section Work—Quizzes*

In addition to the formal lectures the students meet regularly throughout the year for a systematic review of the material covered by the regular lectures. In Boston the Freshmen meet three times each week for half-hour quizzes, and Sophomores once a week for a half-hour quiz. In Boston and in the Divisions at least six hours is devoted to intensive review work during the latter part of each course. These reviews are additional to the regular lectures. The quizzes are conducted by experienced instructors.

### *Public Speaking*

Instruction is offered in Public Speaking. A lawyer, to be successful, should have ability and training in public speaking; hence it is recommended that all members of the Junior class take the course offered.

The work is in charge of a skillful instructor who has had extensive experience in public speaking and who is familiar with Debating and Parliamentary Procedure. The course is held at an hour which does not conflict with the regular Law School work. Duly enrolled members of the Junior Class are permitted to attend the course without additional expense.

### *Moot Court*

In connection with the course on Practice, a Moot Court is carried on. Actions are instituted in this court and carried through all the intermediate stages of final judgment in accordance with the practice prevailing in the State courts. Students are designated to act in the capacity of clerks, attorneys, parties and of others who regularly make up the personnel of the usual court organization.

Instruction of a practical nature is thus given to the students in matters pertaining to practice. They are shown what steps have to be taken preliminary to the trial and how to take them; they have the

intricate procedure of the trial visualized for them; and they are made to carry out in detail all measures which need to be taken supplementary to the trial in order to realize the benefits of a successful issue or to safeguard the rights of clients in case of an adverse decision.

In a word, the purpose of our Moot Court is to give the students actual experience in using in a practical way the knowledge of the law which they get in the other courses of the curriculum.

### *Special Lectures*

Special lectures are offered from time to time on subjects not included in the regular program of instruction. These lectures are open to members of the Law School without additional expense.

### *Bar Examination Review*

Ample provision is made for reviewing the work of each year in our regular School schedules; and, at the close of the full course—just previous to the bar examination—the whole field of the law is covered by a systematic review of great value to the students. Mr. Asa S. Allen, Associate Dean of the Law School, is most effective in this review work in Boston, and his classes are attended, not only by Northeastern students, but by graduates of the other New England Law Schools.

In order to make the work of our Law School as valuable as possible, an arrangement has been made whereby each regular member of the Senior Class in Boston may attend this review course without additional expense.

This opportunity for free instruction will be available to students but once, and then only upon the presentation of a card of admission signed by the Dean. Graduates of other law schools who desire to take this review course will arrange personally with Mr. Allen.

When necessary, bar reviews in the Divisions of the school will be established in connection with the particular Division concerned.

# *General Information*

## *Text-books*

Text- or case-books are required in most of the courses. These books may be purchased by the student, or, if convenient, the books of the Law Library may be used in the building. It is advantageous for a student to own the books, however, in order that he may better employ his hours at home.

Note-books and general supplies may be obtained at the book stores at reasonable rates.

## *Law Libraries*

### *Boston*

The Law Library, located in the Administration Building at Boston, is large, well-equipped and comfortably furnished. In it may be found case- and text-books on all of the subjects taught in the School, as well as on related subjects, the State Reports of Massachusetts and New York, the English Reports, United States Supreme Court Reports, etc. The Library is open daily from 9 A. M. to 10 P. M.

### *Worcester*

The Worcester Division has made a good start toward building up an excellent Law Library. A special library room has been provided. New books are being added each year so that the students may have the best material at their disposal. Through the kindness of Mr. John Saxe, his Law Library of over three hundred volumes has been made available for the students. A full set of Massachusetts Reports, Acts and Resolves, Digests, Case-books, Text-books and other valuable material is available.

### *Springfield*

Springfield is fortunate in having access to the splendidly equipped Law Library at the Hampden County Court House. For the present

and while the relationships permitting the use of this Library are so cordial, the Springfield Division is adequately taken care of in its Library facilities.

### *Providence*

A small but well selected Law Library is available for all Providence students. New volumes are being added regularly. A full set of the Rhode Island Reports, Standard Case-books, Statute Books and other valuable reference material has been placed in a specially fitted room to which students have easy access during the day or evening.

By special arrangement the Supreme Court Law Library is open at least one evening each week for the use of students.

### *Buildings*

The School of Law is housed in the Y. M. C. A. Buildings in Boston, Worcester, Springfield, and Providence. Each of these buildings is of modern construction and offers excellent and varied facilities for the use of the students.

### *Classrooms*

Adequate, well-lighted, heated and ventilated classrooms are provided.

### *Dormitories*

In each Y. M. C. A. Building are dormitory facilities whereby students may secure comfortable, and well furnished rooms at a minimum price. There is a congenial atmosphere of fellowship and of social life in the dormitories, and opportunities are available for forming the best type of friendships.

### *Physical Culture*

Each building has unexcelled facilities in the nature of gymnasiums, swimming pools, and bowling alleys. Opportunities are provided for practically every physical activity. School of Law men are urged to avail themselves of the opportunities for physical training. It is especially necessary that men who are employed during the day and

studying in the evening take some kind of adequate exercise in order that they may do the most effective school work.

### *Reduced Gymnasium Rates to Students*

In order to insure the use of the gymnasium and to bring it within the means of all students, special reduced rates are granted to School of Law students.

### *Other Recreative Opportunities*

Other recreative opportunities of a widely varied nature are offered in the form of billiard rooms, libraries, game rooms, and other facilities. In fact the Y. M. C. A.'s in which the School of Law is located are equipped for almost every type of clean, virile, and wholesome activity.

### *Social Life of the School*

The constant association with other men of outstanding ability from nearly every type of human activity is of incalculable value to the student of law. In addition to the usual classroom contacts men are also brought into contact with one another through special lectures, class dinners, and other school functions which are highly profitable and pleasurable.

### *The Congress*

The Congress, which has been in operation for several years in Boston, is modeled after the National House of Representatives, having its speaker and other officers. This Congress meets weekly in the Y. M. C. A. parlors immediately following the class lectures. It offers opportunities for acquiring a good working knowledge of Parliamentary Law, for debate, for discussion and for extemporaneous speaking. Bills are introduced and considered in accordance with the current procedure in the National House of Representatives. The Congress is open not only to Law School students but to others who possess the necessary qualifications. It consists of an unusually able body of men and forms a very desirable activity in which a great many of the Law School students participate with considerable value.

### *Debating Club*

The Debating Club of the Law School offers, in Boston, opportunity for training in the principles of debating and gives opportunity for participation in debates on current questions of vital interest. Membership in the Debating Club is confined exclusively to Law School students but is open to all students in the school who desire to participate in this form of activity.

# Graduates

The following men have been granted the degree of LL.B. in the years indicated:

## Class of 1902

Name	Residence	Passed Bar Examinations
Charles Bartlett.....	Boston	1901
*William Williams Bartlett.....	Roxbury	
Corrill Ellsworth Bridges.....	Charlestown	1902
Dennis Francis Buckley.....	Georgetown	1903
Timothy John Buckley.....	Charlestown	1902
Timothy Francis Collins.....	Arlington	1902
Frederick A. Gaskins.....	Milton	1903
William John Greene.....	Cambridge	1902
Mederic Guilbault.....	Medford	1903
George Latimer.....	Boston	1903
John Bailey Loring.....	Dorchester	1901
Charles Henry Lutton.....	South Boston	1902
Edward MacHarrie.....	Somerville	1902
*George Alexander McKinnon.....	Cambridge	1902
George Henry Magurn.....	East Boston	1903
William Peyton.....	Boston	1902
Joseph Louis Philip St. Coeur.....	Cambridge	1902
James Joseph Sheehan.....	Peabody	1902
James Boniface Valley.....	Cambridge	1902

## Class of 1903

Robert Ross Thompson Bower.....	Boston	1903
John Henry Coakley.....	Chelsea	1903
Arthur Lester Connolly.....	Boston	1903
Edwin Horace Cooley.....	Brookline	1903
Isidor Fox.....	Revere	1903
Walter William Graves.....	Salem	1902
Reginald Hainsworth.....	Cambridge	1903
John Edward MacKinnon.....	East Boston	1903
Francis Louis Maguire.....	Arlington	1903
Frederick William Otto.....	Dorchester	1902
George Whitehouse Reed.....	Roxbury	1903
Julian Serjack.....	Dorchester	
John Speris.....	Dorchester	1902

## Class of 1904

Grosvenor Tarbell Blood.....	Newburyport	1904
Joseph Thomas Brennau.....	Cambridge	1904
Frederic Carroll.....	London, England	1904
Alfred Pugh Clark.....	Allston	1904
Charles Carthage Connor.....	New Bedford	1904
James William Dolan.....	Waltham	1904
Peter Jefferson Donaghue.....	Dorchester	1904
Michael Lawrence Fahey.....	Charlestown	1904
Carl Gerstein.....	Boston	1904
August George Gutheim.....	Washington, D. C.	1904
William Barton Jensen.....	East Boston	1904
Leo Sidney Jolles.....	Roxbury	1904
Louis Levin.....	Boston	1905
Thomas Francis Mansfield.....	East Boston	1904
George Yenetchi Parker.....	Charlestown	1902
Ralph Merrill Smith.....	Somerville	1904
Arthur Asher Sondheim.....	Roxbury	1904



Name	Residence	Passed Bar Examinations
Henry George Spence.....	Roxbury	1904
William Joseph Welch.....	Roxbury	1905
David White.....	Boston	1904
Jonathan Breck White.....	Watertown	1904

### *Class of 1905*

John Joseph Attridge.....	Boston	1906
Walter Watson Chambers.....	East Dedham	1906
John McLean Crawford.....	Charlestown	1905
John Francis Dunn.....	Dorchester	1907
John Henry Ellis.....	Dorchester	1904
Horace Porter Farnham.....	Peabody	1905
John Gregory Fortune.....	Malden	
Morris Burton Frankel.....	Boston	1905
Isaac Gordon.....	Boston	1905
Samuel Hurwitz.....	Roxbury	1905
Abram Hyman.....	Boston	1906
Bernard Charles Kelly.....	South Boston	1907
*Hugh Boniface McEachern.....	South Boston	1907
Leonard Wesley Parker.....	Boston	1906
*Joseph Albert Sedgwick.....	Quincy	
William Payson Smith.....	Dorchester	1905
Daniel Sullivan, Jr.....	Boston	
*Ralph Lewis Theller.....	Cambridge	1911
Arthur William Vaughan.....	Somerville	1905
Alonzo Ernest Yont.....	Dorchester	1904

### *Class of 1906*

Henry James Angell.....	California	1906
Sanford Bates.....	Dorchester	1906
Philip Anthony Brine.....	Somerville	1906
Dennis Francis Carpenter.....	Dorchester	
William Francis Connor.....	Waltham	1906
John Cornelius Cronin.....	South Boston	1906
Patrick Joseph Dowd.....	Waltham	1906
Michael Joseph Doyle.....	Boston	1906
*John Mix Finch.....	Everett	1907
Hamlet Samuel Greenwood.....	Lowell	1906
John Hamilton, Jr.....	Jamaica Plain	1907
Edward Warren Harnden.....	Boston	1906
John Michael Hayes.....	Dorchester	1906
Walter Lawrence Hobbs.....	Boston	1906
Albert Edward Hughes.....	Somerville	1907
*Charles Sumner Johnson.....	South Boston	
Thomas Kelley.....	Boston	1905
Percy Francis Lannon.....	Roslindale	1907
George Henry Locke.....	Colorado	
Francis Maloney.....	Charlestown	1906
James Alvin McKibben.....	Dorchester	1905
Peter Francis Minnock.....	Waltham	1906
Thomas Joseph Moloney.....	Charlestown	1906
Stephen Francis Morgan.....	Charlestown	1906
Hubert Aloysius Murphy.....	Dorchester	1905
John Quinn, Jr.....	Boston	1906
John Edward Quinn.....	Cambridge	1906
Ernest Orlando Raymond.....	Somerville	1906
Henry Burgess Roberts.....	Somerville	1906
John Francis Rogan.....	Charlestown	1905
Charles Henry Rogers.....	New York	1906
Samuel Rothblum.....	Dorchester	1906
Joseph Francis Sullivan.....	Charlestown	1906
John Foster Tufts.....	Watertown	1908
Arthur Lorin Woodman.....	Cambridge	1906

### *Class of 1907*

George Pomeroy Anderson.....	Boston	1909
*William Henry Barter.....	Dorchester	1907

Name	Residence	Passed Bar Examinations
*Charles Currier Beale	West Medford	1907
Rosecoe Hosmer Belknap	Frammingham	
Thomas Francis Brennan	Cambridge	1908
Michael John Carey	Somerville	1908
*John Joseph Coady	Dorchester	1906
Daniel Francis Cunningham	Brighton	1907
Maurice Francis Cunningham	Cliftondale	1907
Michael John Dennen	Winchester	1907
Daniel John Daly	Brookline	1907
John Henry Devine	Brighton	1907
Albert Coolidge Eames	Boston	1908
Walter Frank Foss	Norwood	
Harry LeRoy French	Waltham	1907
Martin Gilbert	Roxbury	1908
Dennis William Hagerty	Boston	1907
Daniel Melbourne Herlihy	Boston	1907
William Hirsh	Dorchester	1907
William Jason Holbrook	South Weymouth	1906
*John Hughes	Boston	
Fernald Hutchins	Dedham	1907
Loring Pierce Jordan	Boston	1907
Arthur Francis Keefe	Everett	1907
Thomas James Lawler	Dorchester	
Everett Charles Lewis	Medford	1907
Frederick William McEnery	Cambridge	1907
Bernard Francis Murphy	Waltham	1909
Edward Clarence Ramsdell	Brighton	1907
Daniel David Rourke	Boston	
Koran Calvin Small	Waltham	1906
William Joseph Stone	Dorchester	1908
Frank Brown Swain	Wollaston	1907
Edward Armstrong Thomas	Winthrop	1908
Henry Patrick Trainor	Waltham	1906
Abraham Hermann Weinstein	Boston	1906
James William Wickwire	Dorchester	1907
Edward Hermann Ziegler	Roxbury	1906

### *Class of 1908*

Arthur Wykeham Ashenden	Dorchester	1909
Benjamin Franklin Beale	Boston	
Edward Sherman Bennett	South Boston	1908
Francis Henry Blackwell	Boston	1907
Robert Campbell	Boston	1908
Henry Elton Chamberlin	Boston	
Francis Aloysius Cronin	Roxbury	
William John Daly	Winchester	1907
John Bernard Dayton	Somerville	1908
James Michael Driscoll	Brookline	1907
James Edward Farrell	West Newton	1908
Charles Augustus Ferguson	Malden	1909
Edward Ferguson	Cambridge	1909
Edward Richard Flavell	Boston	
Wallace Alfred Gleason	West Roxbury	1908
Michael Aloysius Henebery	Worcester	1908
George Willard Hopkins	Concord	1909
Charles Edward Houghton	Hyde Park	1909
Morris Jolles	Roxbury	1908
Max Manuel Kalman	East Boston	1910
Richard Ernest Kent	East Boston	1908
Francis Warren Kimball	Chelsea	1908
*Howard Newton Legate	Roxbury	1908
Harrison Loring, Jr.	Roxbury	1908
Edwin Tibbets Luce	Arlington	1908
Edward Aloysius McEttrick	Brookline	1907
*Charles Leroy Moore	Malden	1907
Thomas Vinson Nash	Weymouth	1910
William Nelson	Boston	1907
Edward Waterman Raymond	Boston	
Fred Louis Roberts	West Somerville	1909
Elmer Gould Royce	Northboro	1909
Charles Marcus Smith	Boston	1908

Name	Residence	Passed Bar Examinations
Robert William Stanley.....	Boston	1908
Thomas Francis Sullivan.....	Cambridge	1910
Nelson Barnard Todd.....	Lynn	1908
Frank White Tucker.....	Somerville	1908
George Edward Walker.....	Wakefield	1908
Jacob Wasserman.....	Boston	1907
Otto Aloysius Wehrle.....	East Boston	1908

### *Class of 1909*

Thomas Donald Adair.....	Roxbury	1909
Henry Nathaniel Andrews.....	Boston	1909
Williams Brooks Baker.....	Danvers	1910
Gilbert Bezanger.....	Winthrop	1909
Thomas Herbert Bilodeau.....	Boston	1909
Henry Victor Charboneau.....	Lowell	1909
Charles Alfred Colton.....	Winthrop	1909
Henry Wesley Davies.....	Ballardvale	1908
Samuel Davis.....	Boston	1907
Ernest Doane Easton.....	Providence, R. I.	
Chester Everett.....	Boston	1909
David William Everett.....	Boston	1909
Andrew Franklin Faden.....	Jamaica Plain	
Thomas Jefferson Fitz.....	Melrose Highlands	1911
William Philip French.....	West Somerville	1908
Don Gleason Hill, Jr.....	Dedham	1909
Perry Brooks Howard.....	Watertown	1910
William Francis Howard.....	Dorchester	1909
Lawrence Woodbury Huse.....	Boston	1909
Daniel Francis Lynch.....	Roxbury	
James Francis McDermott.....	Boston	1909
Frank Eliot Marble.....	Lynn	1910
George Nelson.....	Boston	1910
William Ignatius Norton.....	Boston	1909
Charles Joseph O'Connell.....	Worcester	1909
James Lewis Roche.....	Lincoln	1909
George Edward Roewer, Jr.....	Boston	1909
William De Forest Ross.....	Wollaston	1909
William Thomas Salter.....	Boston	1909
Arthur Lawrence Stevenson.....	Newton	1908
William Booth Stevenson.....	Newton	1909
James Aloysius Sullivan.....	Boston	1909
Dana Scott Sylvester.....	Brookline	1908
James Irwin Tucker.....	West Somerville	
Alexander Thurrott Walker.....	Forest Hills	1909
Robert Winthrop Young.....	Boston	1909

### *Class of 1910*

Walter Pennington Abell.....	Roslindale	1910
William Antcliffe Bellamy.....	Taunton	1910
John Bianchi.....	Newtonville	1910
Lyman Warren Brooks.....	Watertown	1911
William Herbert Burke.....	Worcester	1911
Ralph Norman Butterworth.....	Revere	1909
James William Byron.....	Concord	1910
John Bernard Canfield.....	Newton	1910
George Henry Carriek.....	Cambridge	1910
James Thomas Carter.....	Dorchester	1910
Fred William Cousins.....	Medford	1910
Adolph Isaac Dinner.....	Roxbury	1910
Shirley Howe Elbridge.....	Waltham	
William Caleb Frye.....	Winthrop	1910
James Clarence Funnell.....	Boston	1909
Jos Julian Orphee Gingras.....	Lynn	1910
Walter Howard Gleason.....	Watertown	1910
Ralph Clifton Glidden.....	Reading	1910
*Thomas Max Gurin.....	Boston	1911
Frank Howard Hallett.....	Dorchester	1910
John Emmett Hanlon.....	Dorchester	1910
Thomas Aloysius Henry.....	Salem	1910

Name	Residence	Passed Bar Examinations
William Martin Henry.....	Salem	1910
Jeremiah George Herlihy.....	Roxbury	1910
Ralph Eugene Hiland.....	Everett	1910
George Preston Hitchcock.....	Brookline	1910
Jesse Allen Holton.....	Boston	1910
William Everett Howe.....	Quincy	1910
Guy Atwood Jackson.....	Dorchester	1910
George Marshall Jewell.....	Everett	1910
Louis Agassiz Jones.....	West Somerville	1910
Wilbur Aaron Jordan, Jr.....	Dorchester	1910
Maurice Kronick.....	Boston	1910
Henry Lawrin.....	Boston	1910
Harold Wesley Loker.....	Swampscott	1910
Hernan Albin MacDonald.....	Beverly Farms	1910
James Preston Mackin.....	Boston	1912
Patrick Joseph Madigan.....	Boston	1910
Frederick Huntley Magison.....	Haverhill	1910
Augustus Vincent Murphy.....	Dorchester Centre	1910
Alexander William Murray.....	Cambridge	1910
Albert Leslie Partridge.....	Waltham	1910
William John Pike.....	Chelsea	1910
Peter Ratzoff.....	Roxbury	1910
Arthur Bickford Rigmey.....	Haverhill	1910
Allan Robinson.....	Revere	1910
Elmer Ernest Spear.....	Everett	1911
James William Sweeney.....	Quincy	1910
James William Spicer.....	Melrose Highlands	
Israel Mark Ullian.....	Roxbury	1910
Robert Conney Van Amringe.....	Roxbury	1910
John Joseph Ward.....	Medford	1910
Maynard Addison Wood.....	West Somerville	1910
Frank Hubert Wright.....	Boston	

### *Class of 1911*

David James Aaron.....	Allston	1911
Philip Julius Aaronofsky.....	Roxbury	
John Alfred Anderson.....	Boston	1911
Charles William Babson.....	Dorchester	1911
Edward Holbrook Baker, Jr.....	Cambridge	1911
George Grant Brayley.....	West Somerville	1910
Leslie Nicholas Brock.....	Cambridge	1911
Winslow Page Burhoe.....	Somerville	1910
Richard Walter Burnes.....	Everett	1911
Moses Caplan.....	Boston	1911
Hugh Augustus Carney.....	Roxbury	1911
Benjamin Harrison Chertok.....	Dorchester	1911
Edgar Weston Cobb.....	Medford	1911
Joshua Aaron Crawford.....	Boston	1911
Otis John Auguste Dionne.....	Walpole	1911
Harvey Alexander English.....	Jamaica Plain	1911
Percival Fitzgerald.....	Mattapan	1912
David Flower.....	Roxbury	1911
William Forbes.....	Boston	1911
William Joseph Geegan.....	West Newton	1910
William Francis Hill.....	Dedham	1911
Henry Hopkinson.....	Jamaica Plain	1911
Frederick Austin Kennett.....	Dorchester	1911
Alfred Carl Malm.....	Brighton	1911
Frederick William McGowan.....	Medford	1911
John Henry Mattson.....	Lynn	1910
Andrew Potter Nichols.....	Fall River	
Orton Abner Peek.....	Boston	1911
William Henry Peterson.....	Cambridge	1911
Chester William Pike.....	Dorchester	1912
John Isaac Preston.....	Wakefield	1911
George Prussian.....	Roxbury	1911
Frederick Rovinovitz.....	Boston	1911
John William Roome.....	Dorchester	
Louis Joseph Roulau.....	Jamaica Plain	1911
William Theis Smith.....	Somerville	1911
Edmund Michael Stanton.....	Roxbury	1912

Name	Residence	Passed Bar Examinations
Theodore Einar Stevenson.....	Roxbury	1910
George Burchstead Tinkham.....	Roslindale	
Lewis Augustine Twitchell.....	Dorchester	
Calvin John Upham.....	Dorchester	1911
Samuel Parsons Vatcher.....	Lynn	1911
Howell Brackett Voight.....	Dorchester	
James Andrew Waters.....	Newton Centre	1910
Alfred Mayer Weismann.....	Jamaica Plain	1911
Augustine Walter Welch.....	Watertown	1911
Alfred Little West.....	Somerville	1911
Charles Chester Willard.....	Cambridge	1912
Ralph Howard Willard.....	Boston	1911
James Graham Wolff.....	Allston	1911

### *Class of 1912*

Asa Samuel Allen.....	Belmont	1912
Harry Lee Bagley.....	Brookline	1912
James Thomas Baldwin.....	East Braintree	1912
Charles Edward Baltzo.....	Melrose	
Henry Albert Bascom.....	Malden	1912
William Henry Bazley.....	Everett	1912
Samuel Tompkins Bennett.....	Malden	1912
Robert Edward Bigney.....	South Boston	1912
John Joseph Burke.....	Boston	1912
Warren Frederick Card.....	Lynn	1912
Cyrus Stewart Ching.....	Boston	1912
George Cohen.....	Somerville	1912
John Joseph Conway.....	West Roxbury	1912
Lester Wilkins Cooch.....	Everett	1912
Ralph Bertrand Currier.....	Chelsea	1912
Wilfred James Doyle.....	Mattapan	1912
Leo Joseph Dunn.....	Roslindale	1911
John William Eldracher.....	Boston	1912
George Robert Ellis.....	Foxboro	1912
Norman Farquhar.....	Boston	1912
Philip Joseph Feinberg.....	Boston	1912
Frank Hervey Fitz.....	Waltham	1912
Frank Freundlich.....	Boston	1912
John Francis Gannon.....	Worcester	1912
Abraham Goldberg.....	Boston	1911
Harry Klauser Good.....	Roxbury	
Charles Emmett Gorman.....	Roslindale	1912
Reuben Bertram Gryzmish.....	Boston	1912
Charles Edward Halliday, Jr.....	Lynn	1912
John Joseph Haney.....	Medford	
Joseph Charles Hannon.....	West Newton	1912
Edward Lavant Harris.....	Arlington	1912
Walter Joseph Hendrick.....	Boston	1912
Frederick Hoitt.....	Boston	1912
Gustav Ferdinand Hollestein.....	West Roxbury	
William Frank Joseph Howard.....	South Boston	1912
Myer Harry Isaacson.....	Dorchester	
Walter Scott Jardine.....	Arlington	
Frank Roland Keith.....	Dorchester	1912
Luke Joseph Kelly.....	Jamaica Plain	
Samuel Thomas Lakson.....	East Boston	1912
Timothy Francis Leonard.....	Charlestown	1913
Finch Elbert Lewis.....	West Somerville	1912
Henry Nathaniel Longley.....	East Braintree	1912
John Michael Lyons.....	East Weymouth	1912
Thomas Bernard McCaffrey.....	Brookline	1912
William John MacInnis.....	Gloucester	1912
Abner Sterling McLaud.....	Lynn	1912
Arthur Hawes McLearn.....	Dorchester	1912
John Cornelius Mahoney.....	Worcester	1913
William Raymond Mahoney.....	Cambridge	
George Albert Mansfield, Jr.....	Waltham	1912
Leslie Rogers Moore.....	Newton	1912
Alexander Nagle.....	Boston	1912
Reginald Ebenezer Peters.....	Cambridge	1911
Benjamin Rabalsky.....	Boston	1911

Name	Residence	Passed Bar Examinations
Arthur Elmer Reiner.....	South Boston	1912
Ralph Henderson Robb.....	Boston	1912
James Percy Roberts.....	Dedham	1911
Michael Seretto.....	Boston	
Leon Leland Silbert.....	Roxbury	1911
Nicholas John Skerrett.....	Worcester	
Walter McCabe Smith.....	Cambridge	1912
George Edwin Stebbins.....	Boston	1911
Richard Rogers Sullivan.....	Charlestown	1912
James Francis Terry.....	Boston	1917
Ralph Carl Thulin.....	Brighton	1912
Frederick J. Turner.....	California	
Nathan Ullian.....	Boston	1912
Joseph Vecchioni.....	Boston	1912
Charles Gordon Whitecomb.....	Allston	
Harold Willis.....	Brookline	1912
Edward Joseph Ziegler.....	East Dedham	1912

### *Class of 1913*

Frank Auchter.....	Boston	1913
Daniel Asher.....	Worcester	1912
Harold Clifton Berry.....	Dorchester	
Walter Francis Blaser.....	Somerville	1913
Edgar Alden Bowers.....	South Framingham	
Aaron Philip Brest.....	East Boston	1913
Philip Augustine Carroll.....	Dorchester	1913
William Joseph Carroll.....	Cambridge	1913
Fred Martin Colby.....	Everett	1913
Robert Shaw Corrigan.....	Natick	1913
Lyman Croan.....	Roxbury	1913
John Dodd Daly.....	Salem	1913
John Patrick Dimond.....	South Boston	
Roy Leslie Duren.....	Boston	
Fred Winslow Fisher.....	Medford	1913
James Francis Flaherty.....	Brighton	1913
James C. Flannery.....	Boston	1913
John Daniel Forgarty.....	Roxbury	1913
John Charles Gilbert.....	West Somerville	1913
Morris Hillel Freidson.....	Roxbury	1913
Alfred Raphael Ghiloni.....	Marlboro	1913
Martin John Helligmann, Jr.....	West Roxbury	1913
*Ralph Waldo Hobbs.....	Quincy	1913
George Frank Howland.....	South Framingham	1913
Lewis Hyman.....	South Boston	1913
Paul Norris Jewett.....	Dorchester	1913
William Francis Johnston.....	Somerville	1912
Max Jolles.....	Roxbury	1912
George William Kenney.....	Wakefield	1913
Albert Edwin Lamb.....	Melrose	1913
A. Robert Martin.....	Forest Hills	1913
James Gervin Moran.....	Mansfield	1916
Michael Joseph Mulkern.....	South Boston	1913
Norman David Nexon.....	Boston	1913
John Saunders Chimo Nicholls.....	East Boston	1913
Joseph Sanderson Pickford.....	Dorchester	1913
William Amber Reed, Jr.....	Chelsea	1913
James Frederic Rollins.....	Dorchester	1913
Josiah Hirsh Rosenberg.....	Boston	1913
Israel Ruby.....	Chelsea	1913
Benjamin Joseph Shoolman.....	Malden	1913
William David Stein.....	Malden	1913
John Gerald Sullivan.....	Medford	1913
Daniel Gordon Thompson, Jr.....	Hyde Park	1913
James Frederick Tobin.....	Roxbury	1913
Carlton Walen Woson.....	Boston	1913
Jacob Benjamin Zuckernik.....	Boston	1913

### *Class of 1914*

Robert Ernest Archibald.....	Dorchester	1913
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Name	Residence	Passed Bar Examinations
Charles Elmer Bartlett.....	Boston	1913
Samuel Bergson.....	Dorchester	1914
John Thomas Comerford.....	Brookline	1913
Thomas Francis Connolly.....	Roslindale	1914
Samuel Henry Davis.....	Reading	1913
Clement Charles Desaulniers.....	Salem	1915
William Benjamin Doggett, Jr.....	Dorchester	
James Michael Downey.....	Dorchester	1913
Robert Saunders Dowst.....	West Virginia	1914
Nathan Efron.....	Boston	1913
Carl Rudolph Felton.....	Boston	1916
Frank Hugh Flagg.....	Dorchester	1914
John Joseph Flaherty.....	Lowell	1913
Leslie Nathaniel Gebhard.....	Everett	1916
Isaac Harold Greenburg.....	Everett	1913
John Edward Hand.....	Cambridge	1913
Ralph Rodney Harris.....	Leominster	1915
Reuben Harris.....	Dorchester	1913
William Martin Helligmann.....	Roxbury	
Thomas Francis Edward Higgins.....	Newton	1914
Roy Howard Hoffman.....	North Reading	1914
Frank Radford Hope.....	Melrose	1915
John Jeremiah Humphrey.....	Dorchester	1915
Harry Eugene Jenkins.....	Boston	
Harold Pratt Litchfield.....	Cohasset	1913
William MacConnell.....	Dorchester	1916
Richard Henry MacDonald.....	Randolph	
Harry Benjamin Mendelsohn.....	Dorchester	1913
Michael Joseph Miles.....	East Boston	1916
Robert Benjamin Mount.....	Dorchester	1913
John Sidney Patton, Jr.....	Boston	1913
Peter Williams Pezzetti.....	Boston	1913
Arthur Carter Pickering.....	Salem	1914
Maurice James Power.....	Charlestown	1915
Carl Fisher Prescott.....	Quincy	
Frank Xavier Reilly.....	Westboro	1915
John William Robbins.....	Somerville	1913
Harry L. Saipe.....	Chelsea	
Philip Samuels.....	Malden	1913
Walter Simonds.....	Milton	1914
George William Skuse.....	Boston	
Charles Harrison Sloan.....	Waverley	1913
Max Smith.....	Boston	1914
Milton Anthony Stone.....	Boston	1913
William Allen Stone.....	Dorchester	1914
Lucius Byron Weymouth.....	Hyde Park	1914

### *Class of 1915*

Walter John Anderson.....	Wakefield	1915
William Ambrose Arthur.....	Revere	1917
Pierce Brigham Bennett.....	West Medford	1916
George Frederick Blood, Jr.....	Hyde Park	
James Alfred Brickett.....	North Cohasset	1915
Benjamin Irving Brudno.....	Dorchester	1915
Walter Alfred Burnham.....	Somerville	1915
Daniel Francis Collins.....	South Boston	1916
William Augustine Connelly.....	East Boston	
John Alfred Crowley.....	Lowell	1915
James Edmund Curry.....	Cambridge	1915
Leopold Harris Dinner.....	Roxbury	1913
George Joseph Ganer.....	Roslindale	1915
Borouch Osher Gofung.....	Boston	1915
Harry Goldkrand.....	Jamaica Plain	1914
Howard Allison Gray.....	Somerville	1915
James Gerard Harnedy.....	Brookline	1916
Joseph Hubbard Hefflon.....	Winchester	1916
Ralph Henry Hermann.....	Boston	
Allan Clare Inman.....	West Somerville	1915
James Edward Karins.....	Boston	1916
Walter Albert Lambert.....	Allston	1915
John Joseph Lillis, Jr.....	Everett	1915

Name	Residence	Passed Bar Examinations
Brent Bradley Lowe	Roxbury	1915
Leo Francis McAleer	Newton	
Thomas Florence McCarthy	Waltham	1916
Benjamin Harrison McKinley	Lowell	1916
Gustave Harold Madsen	Woburn	1915
Frederick Roberts Makepeace	Malden	1915
Rupert Lamert Mapplebeck	Roxbury	1915
Clifford Orland Mason	Winchester	1916
John Jones Murray	Arlington	
*Frank Joseph Neylan	Somerville	1915
A. Lincoln Niditch	Boston	1915
Robert Clement Orpin	Medford	1913
George Stephen Parker	Dorchester	1916
Sencea Arthur Paul	Woburn	Maine Bar 1916
Samuel Pitchel	Boston	
William Henry Powers, Jr.	East Boston	1917
Lynn Melvin Ranger	Lynn	1915
Joseph Edward Riley	Hopkinton	1914
Leon Rubenstein	Dorchester	1915
Simon Schwartz	East Boston	1916
Mark Shain	Roxbury	1915
Bernard Shalit	Dorchester	1920
Isaac Edward Simons	Roxbury	1916
Howard Yeaton Stearns	Arlington	
Israel Stolper	Chelsea	1917
Dean Judson Tolman	Boston	1917
*Frank Harvey Towne	Salem	
Alonzo Joseph Ward	Cambridge	
Albert Franklin Welsh	Ipswich	1913
George Franklin Wenrich	Malden	1917
Harry Edward Wheeler	Boston	1916
Albert Freeman Wigley	Dorchester	
George Wilinsky	Boston	1915

### *Class of 1916*

Jacob Lewis Aaron	Allston	1916
Albion Americus Anderson	Melrose Highlands	1917
Frederick Russell Bartlett, Jr.	Roslindale	
Enos Ralph Bishop	Dover, N. H.	
John Stanhope Ray Bourne	Cambridge	1916
Herman Copeland Bowser	Arlington	1916
*Irving Nelson Burbank	Belmont	
Frederick Walter Cobb	Newton Upper Falls	
Benjamin Cohen	Roxbury	
David Pulsiver Colville	Roxbury	1917
Daniel Florence Crowley	Salem	1916
Richard Brenton Currie	Boston	1916
Lewis Freeman	Cambridge	1917
Thomas Roland Freeman	Lynn	1916
William Michael Gaddis	Dorchester	1916
H. Hart Gilfix	Newton	1916
Thomas Daniel Gleason	Roxbury	1916
Samuel Gotthieb	Everett	1916
David Greer	Newton	1916
*Henry Jordan Greer	Pawtucket, R. I.	1917
Evan Warren Griffiths	Cambridge	
Charles Chamberlain Grimmons	Somerville	
John Justus Hayes	Allston	1915
Alfred Harris Heininger	West Somerville	1917
Moses Hochberg	Dorchester	1918
Arthur Viall Jones	Somerville	1916
Herman Axel Kinder	Cambridge	
William Tucker Martin, Jr.	Marblehead	1916
John Henry Moran	Brookline	1916
William John Edward Muleahy	Cambridge	1916
Alfred Francis Mulvihill	West Newton	1917
John Joseph McCarthy	Salem	1916
Robert Andrew MacLellan	Dorchester	1918
Chester Weston McNeill	Somerville	1917

\* Deceased



Name	Residence	Passed Bar Examinations
James Edward McVaun.....	Peabody	1916
Edward Abraham Nathanson.....	Roxbury	1916
John Joseph Norton.....	Jamaica Plain	1916
Benjamin Novack.....	Dorchester	1916
Jeremiah Francis O'Neill.....	Charlestown	1919
James Aloysius Pagum.....	Malden	1916
John Austin Reilly.....	Dorchester	
Thomas Michael Reynolds.....	Roslindale	1915
Bartholomew Joseph Roman.....	Peabody	1917
William Charles Rosen.....	Roxbury	1916
John Bryant Sawyer.....	Wakefield	1916
David Frederick Sibulkin.....	Boston	1916
Harry Cleverly Slocomb.....	Winthrop	1917
Maurice Thorner.....	Cambridge	1917
John Joseph Walsh, Jr.....	Boston	1916
Walter Thomas Walsh.....	South Boston	1917
Percy Leroy Wetmore.....	West Somerville	1917
William Colby Wildey.....	West Somerville	1917
Charles Thomas Willock.....	South Boston	1917

### *Class of 1917*

Ephraim Tyler Albert.....	Dorchester	1917
Maurice Ernest Andelman.....	Cambridge	
Walter Newton Benson.....	Malden	1916
David Harold Bloom.....	Dorchester	
Herbert George Brower.....	Waltham	1917
Bertram Abel Brown.....	Quincy	1918
Terence Charles Carbin.....	Lynn	
David Julius Cohen.....	Roxbury	1918
Hans Christensen.....	Newton	
John E. Conway.....	Jamaica Plain	1917
John Francis Daly.....	Somerville	1917
Roy Chandler Davis.....	Dorchester	1917
William John Donohue.....	Brighton	1917
Thomas Edward Doyle.....	Roxbury	1918
William John Doyle.....	Roslindale	1920
Frank Joseph Duffy.....	Quincy	1918
Charles Fairhurst.....	West Somerville	1917
Charles Edward Fay.....	Jamaica Plain	1917
Jeremiah Gilman Fennessey.....	Boston	
Harold Maxwell Fine.....	Roxbury	1918
James Roberts FitzGerald.....	Belmont	1917
Roland Willard Fletcher.....	Mattapan	1918
Lloyd Albinus Frost.....	Cambridge	1917
John Edward Gilmore.....	Brockton	1917
E. Max Gladstone.....	Roxbury	1917
Vincent Regulus Grainger.....	Cambridge	1918
George McClellan Harrigan.....	Lowell	
Patrick Augustine Hayes.....	Lowell	1917
Joseph William Hickey.....	Shrewsbury	1917
Maurice Louis Hoberman.....	Boston	
James Irving Holsberg.....	Roxbury	
William Dudley Hopkins.....	Boston	1920
Henry Adolphus Horn.....	Boston	1917
Abraham Kamberg.....	Boston	1916
Joseph Henry McCann.....	Boston	
William Henry McDonnell.....	South Boston	1916
Samuel Joseph Martin.....	Arlington Heights	1917
Samuel Maylor, Jr.....	East Boston	1917
Frederick Arnold Moeller, Jr.....	Cambridge	1917
Farquharson James Muir.....	Winchester	1917
Ambrose Norwood Nickerson.....	Hyde Park	1917
Albert Lawrence Olson.....	Waltham	
Raynor Lesley Osborne.....	Everett	
Edward Willard Phippen.....	South Boston	
Abram Resnick.....	Boston	1918
Allen Tucker Rogers.....	Everett	1917
Ernest Charles Roos.....	Brookline	
Samuel Rosenberg.....	Boston	1917
Philip Rosenthal.....	Dorchester	1917
Maxwell Sawyer.....	Boston	1919

Name	Residence	Passed Bar Examinations
Joseph Harry Seaman	Roxbury	1919
Benjamin Simons	Boston	
Timothy Daniel Sullivan	Cambridge	1917
Warren Russell Symonds	Salem	1919
Harold Eugene Jeanerette Tarr	Somerville	
Clarence Milton Whipple	Boston	1917
John Philip White	Roxbury	1917
Delphin Francis Young	Brookline	
William Zisman	Roxbury	1918

### *Class of 1918*

Irving Bertman	Dorchester	1918
Sidney Arthur Bowdidge	Somerville	1918
Dennis Benedict Burns	Boston	1918
Daniel David Carmell	South Boston	1918
Edward Joseph Casey	Dorchester	1918
Edwin Atwood Chalmers	Allston	1919
Paul Lorchester Cifrino	Dorchester	1920
Frederick James Cloutman	Salem	1918
Charles Henry Coleman	Roxbury	1918
Robert Croan	Roxbury	1918
Maurice Walter Dennison	Allston	
John Isadore Goldberg	Revere	1921
Louis Benjamin Goldman	Roxbury	1919
John Joseph Gorman	Woburn	1918
Ernest Alfred Hale	Brookline	1918
Francis Bowman Hawley	Waltham	1919
John Gerard Herlihy	Boston	1919
Ernest Winslow Jones	West Somerville	1918
Emanuel Rane	Pittsfield	1919
William Francis Kane	Dorchester	1918
Joseph Levine	Malden	1918
James Arthur Liacos	Peabody	1918
John Patrick McBride	Waverley	1918
Joseph Wallace Mahony	Revere	1921
Harry Mandelstam	Roxbury	1918
George Thomas Marvin	West Somerville	1917
Francis Louis Norman	South Boston	1919
John Francis O'Connell	Dorchester	1918
William Joseph O'Neill	Boston	1918
Albert Spurzheim Olsson	Brighton	1918
Fred Don Pollard	Beachmont	1919
Bernard Radin	Beachmont	1919
Joseph Riley	Boston	1918
James Francis Rockett	Boston	
Ned Maurice Russell	Medford	1918
Jacob Abraham Shure	Dorchester	1918
Morris Jeremiah Smith	Roxbury	1919
Benjamin David Solomon	Allston	1918
Charles Augustus Southworth	Swampscott	1918
Edgar Saxon Stanley	Needham	
Chester Chandler Steadman	Cambridge	1918
*Richard Loud Stubbs	Wollaston	1918
Arthur Vincent Sullivan	Dorchester	1919
Patrick Hugh Tenney	Wakefield	
Albert Theodore Wall	Worcester	1918
Herman Frederick Wohlschlagel	Roxbury	1919
Leon Irving Wood	Needham	
John Dean Wright	Boston	1919

### *Class of 1919*

Robert Edwards Annin, Jr.	New York	1919
Thomas Francis Bannon	Waltham	
Louis Samuel Blackstone	Dorchester	1920
Ralph Clinton Bush	Cambridge	1919
Bernard Francis Carolan	Boston	1921
James Osborn Credle	Cambridge	1920
Francis Nicholas Cummings	Dorchester	1919
Patrick Joseph Delaney	Cambridge	1919

Name	Residence	Passed Bar Examinations
Solomon Finkelstein.....	Dorchester	
James Ingersoll Forsyth.....	Medford	1920
Stanley Delmont Foster.....	Boston	1920
Emanuel Goldberg.....	Roxbury	1919
William John Kenney.....	Brighton	1919
Horace Kidger.....	Newtonville	
Raymond John Lavelle.....	Lowell	1919
Hymen Magazine.....	Boston	1919
Sidney Chester McIntire.....	Boston	1919
John Leander McMillan.....	Springfield	1919
Thomas Francis Megan.....	Cambridge	1919
Robert Lewis Odum.....	Lynn	1919
John Boyle O'Hare.....	Brighton	1919
James O'Keefe.....	Boston	1919
Emanuel Olson.....	East Boston	1919
Joseph Reder.....	Lawrence	1920
Jacob M. Reed.....	Lynn	1919
George Richmond.....	Boston	1919
Allan Robinson.....	Boston	1919
John Rogers.....	Cambridge	1920
John Henry Rooney, Jr.....	Woburn	1919
Harry Rubin.....	Boston	1920
Philip Everett Sage.....	Cambridge	1919
William Walter Scott.....	Beachmont	1920
Arthur William Sullivan.....	Boston	1919
Alfred Abraham Tucker.....	Boston	1919
Harvey Edward Weir.....	Medford	1919
Louis Roger Wentworth.....	Melrose	1919

### *On Account of the War*

Carbon, Terence Charles.....	'17.....	Lynn	
Cifrino, Paul.....	'18.....	Dorchester	1920
Goldberg, John Isadore.....	'18.....	Revere	1921
Hoberman, Maurice Louis.....	'17.....	Boston	1921
Levine, Joseph.....	'18.....	Malden	
Kanter, Emanuel.....	'18.....	Pittsfield	1919
Pollard, Fred Don.....	'18.....	Beachmont	1919
Roos, Ernest Charles.....	'17.....	Brookline	
Sullivan, Arthur Vincent.....	'18.....	Dorchester	1919
Wright, John Dean.....	'18.....	Winthrop	1919

### *Class of 1920*

Louis Warren Alintuck.....	Dorchester	1920
Florian George Arey.....	Boston	1922
Samuel Edward Bloomberg.....	Roxbury	
Sarkis Kevork Boyajian.....	Providence, R. I.	1921
Irving Menzies Brown.....	Allston	
Meyer Cohan.....	Dorchester	
Harold Otis Cole.....	Maplewood	1920
David Maurice Cook.....	Reading	1921
Harry Nathaniel Cushing.....	Dorchester	1921
Leon Moleti Delano.....	Nahant	1920
Albert Oral Demers.....	Cambridge	
Edward Cornelius Dougherty.....	Cambridge	1920
William Charles Drouet.....	Arlington Heights	1920
Morris Louis Edelstein.....	Boston	1920
John Arthur Edgerly.....	Boston	1920
Ernest Abraham Gordon.....	Chelsea	
Fred James Hallenbrook.....	Allston	1920
Simon Pendar Humphrey.....	Cambridge	1921
David Philip Israel.....	Salem	1921
Michael Arthur Jannini.....	Boston	
Leo Kopel.....	Boston	
John Francis Leary.....	Medford	1920
Edwin Farrand Livingston.....	Quincy	1921
Nicholas Anast Loumos.....	Belmont	1921
Hector John MacLean, M.D.....	Boston	1921
Edward John McVey.....	Lowell	1920
Joseph Lawrence McGrath.....	Sharon	1920
Max Mandelstam.....	Winthrop	1921

Name	Residence	Passed Bar Examinations
George Albert Morin	Watertown	1919
Samuel Charles Needleman	Dorchester	1920
Jacob Ogan	Dorchester	1919
Edward Angelo Pecece	Everett	1920
John Perry	Lowell	
Andrew Pierce	Malden	1920
Clement Joseph Redmond	Cambridge	1920
Benjamin Joseph Rubin	Dorchester	1920
Edward Scally	Lowell	1920
William Scally	Lowell	1920
Harrie Walter Smith	Dorchester	
Barnard Samuel Solar	Allston	
Harry Traverse	Roxbury	1919

### *On Account of the War*

Joseph Bearak	'18	Boston	1919
John Henry Condon	'18	Medford	1920
Joseph Harvey Davis	'19	Malden	1919
George Frederick Gilbert	'19	Cambridge	1921
Leslie John Gilbride	'19	Roslindale	1920
James Arthur Howson	'19	Boston	1921
John Andrew Lyons	'19	Somerville	
John Jacob McGlew	'18	Dorchester	
Harrison Dawes Mason	'18	Brookline	1919
Christopher Charles Mitchell	'19	Boston	1921
Peter W. Pate	'18	Somerville	
Frederick Louis Reynolds	'19	Medford	1921
Joseph Rice	'19	Boston	1921
Harold Seidenberg	'18	Revere	1920
Clifton Henry Wheeler	'19	Cambridge	
Edwin Merton Wolley	'18	Newton	1920
William Orange Young	'18	Providence, R. I.	

### *Class of 1921*

John Louis Bianchi	Worcester	1922
Raymond Pierre Bourgeois	Lowell	1922
Frederick Cay	Jamaica Plain	
Basil Sanford Collins	Watertown	
George Benjamin Conly	West Roxbury	1921
William E. Corkum	Jamaica Plain	1921
Neil Henry Cronin	South Boston	
Julian Richard Cross	Boston	
Daniel Emerson Crowe	Holbrook	
James Maurice Cushing	Brighton	
Israel Hyman Deitch	Chelsea	
Alfred Elwyn DeMerit	Reading	1922
Mario Frederick DiTroia	East Boston	
Thomas Edward Durant	Holbrook	1922
Patrick Joseph Farrell	Boston	1922
Melville Stanley Files	Foxboro	1922
George Goodman	New Bedford	1921
William Francis Hall	Natick	1921
Louis Hammer	Malden	1921
William Henry Healey	Natick	1922
William James Healey	Dorchester	1921
Francis Joseph Hickey	Boston	
John Kavanaugh Holland	Watertown	1922
James Joseph Hurley	Worcester	1921
Charles Timothy Irwin	Dorchester	
Aaron Kobrin	Lynn	1921
Edward Francis Lyons, Jr.	Roxbury	1921
Eugene Joseph McElroy	Providence, R. I.	1921
Norman John MacGaffin	Medford	1921
Thomas Joseph Maher	Medford	
Francis Walter Marshall	Boston	1921
Herbert Preston Mason	Cliftondale	
Leo Meltzer	Boston	1921
Ernest Sidney Meredith	Watertown	1921
Charles Henry Metcalf	Ipswich	1921
Israel Mochedlover	Malden	

Name	Residence	Passed Bar Examinations
Frederick Williston Proctor, Jr.....	Chelsea	1921
William Augustus Raddin.....	Cliftondale	
Jose Enrique Segarra Rivera.....	Boston	1921
Laurence Baird Roeder.....	Brighton	
Donald Stahl.....	Dorchester	1921
Sydney E. Taft.....	Framingham	
Frederick Arthur Thayer.....	Cohasset	1921
Edward J. Thomas.....	Somerville	
Saul Ralph Tucker.....	Boston	
Edward John Voke.....	Chelsea	1921
Harry Joseph Webb.....	Medfield	1921
Maurice Edward White.....	Boston	
John Maurice Wiseman.....	Arlington	1921

*Delayed Degrees on Account of War Service*

Horace Tracy Cahill.....	Boston	1921
Albert Bernard Colligan.....	Watertown	1921
Dennis Michael Cronin.....	Newton	1922
Francis Daniel Crowley.....	Boston	1921
James T. Doherty.....	Dorchester	1921
William Henry Elmore, Jr.....	Boston	
John Finelli.....	Newton	1921
Thomas Bartholomew Higgins.....	Lowell	1921
Frank Hamlin Grows.....	Cambridge	1921
Mayland Prince Lewis.....	Nahant	1921
John R. O'Neill.....	Roxbury	1921
John Edward Picone.....	Brighton	1921

\*Deceased.









# Northeastern University

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School of Commerce  
and Finance

1922-23



Co-Educational

EVENING SESSIONS

Boston Young Men's Christian Association  
316 Huntington Avenue  
Boston, Massachusetts

# NORTHEASTERN UNIVERSITY

## DAY SCHOOLS

### *School of Engineering*

Four-year courses in Civil, Mechanical, Electrical, Chemical, and Administrative Engineering, leading to the degrees of Bachelor of Civil, Mechanical, Electrical, and Chemical Engineering. Conducted in co-operation with engineering firms. Students earn while learning. Work conducted at Boston.

### *School of Business Administration*

Four-year course in Business Administration leading to the degree of Bachelor of Commercial Science. Students may specialize in Industrial Management, Marketing, Finance, and Accounting. A two-year course leading to the Certificate of Proficiency. Work conducted at Boston.

## EVENING SCHOOLS

### *School of Law*

#### (Co-Educational)

Four-year course leading to the degree of Bachelor of Laws. Preparation for Bar Examination and practice. High scholastic standards. A limited number of mature special students admitted each year. Work conducted at Boston, and in Divisions at Worcester, Springfield, and Providence.

### *School of Commerce and Finance*

#### (Co-Educational)

Four-year courses in Professional Accounting and Business Administration leading to the degrees of Bachelor and Master of Commercial Science. Special two-year courses for those desiring intensive specialization. Work conducted at Boston, and in the Divisions and Branches at Worcester, Springfield, Providence, Bridgeport, New Haven, Lynn, Malden, and Newton.

### *Evening Polytechnic School*

Three-year courses in Civil, Mechanical, Electrical, Chemical, Structural, Industrial, and Automotive Engineering leading to a diploma. Work conducted at Boston, and in the Divisions at Worcester, Springfield, New Haven, and Bridgeport. (The school in Worcester is known as the "Evening School of Applied Science.")

### *Northeastern Preparatory School*

Courses in usual high school subjects leading to a diploma. Three sixteen-week terms each year. It is possible for students to meet college-entrance requirements in from three to five years. Work conducted at Boston and in Divisions at Worcester and New Haven.

### *Vocational Institute*

A diversified program of short intensive courses including all phases of Automotive industry with special instruction for owners, salesmen, mechanics, and chauffeurs.

### *Department of University Extension*

Home Study courses in co-operation with the United Y. M. C. A. Schools. Classes organized and lectures conducted in cities and towns throughout New England, and in co-operation with leading corporations and business concerns. Divisions and Branches operated in connection with this Department.

For further information concerning any of the above schools

### Address

NORTHEASTERN UNIVERSITY  
316 Huntington Avenue, Boston, Massachusetts  
or nearest division or branch.

# Northeastern University

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## School of Commerce and Finance

1922-23



CO-EDUCATIONAL

*EVENING SESSIONS*

Northeastern University of the Boston Y. M. C. A. is incorporated under the laws of Massachusetts and is located in Boston. Divisions of the University are conducted in Worcester, Springfield, Bridgeport, Providence and New Haven. Branches are conducted in Lynn, Cambridge, Malden and Newton.

# CALENDAR

1922	September 11	Senior Class Lectures begin.
	September 11-15	Examinations for Entrance, for Removal of Conditions, and for Advanced Standing.
	September 25	Other class lectures begin. Payment of the first installment of tuition.
	October 12	Columbus Day (classes omitted in Massachusetts and Connecticut).
	November 20	Payment of second installment of tuition.
	November 30	Thanksgiving Day (classes omitted).
	December 23-	
1923	January 1	Christmas Recess.
	(both dates inclusive)	
	February 1	Payment of last installment of tuition.
	February 22	Washington's Birthday (classes omitted).
	March 1	Candidates for degrees must file application.
	April 19	Patriot's Day (classes omitted in Massachusetts).
	May 30	Memorial Day.
	June 4-8	Competitive scholarship examinations for high School graduates.
	June 17	Baccalaureate Sermon (Boston).
	June 20	Commencement Exercises (Boston).

# NORTHEASTERN UNIVERSITY

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# NORTHEASTERN UNIVERSITY

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Secretary

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Superintendent of Secondary Schools

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Director Vocational Institute

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## Committee on Curriculums

CARL S. ELL, Chairman

## Committee on Commencement

GALEN D. LIGHT, Chairman

## Committee on Catalogues

CARL D. SMITH, Chairman

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# The School of Commerce and Finance

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CARL DAVID SMITH, B.H., Regional Director  
TURNER FLOWERS GARNER, A.B., Registrar

## BOSTON

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TURNER FLOWERS GARNER, A.B., Registrar

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ERNEST HENRY GRISWOLD, B.S., C.P.A., Auditing  
RAYMOND DELMAR WILLARD, B.C.S., C.P.A., System Building  
DANA SCOTT SYLVESTER, LL.B., B.C.S., Business Law  
GEORGE L. HOFFACKER, B.C.S., Partnership and Corporation Accounting  
CHARLES ALBERT CEDERBERG, Partnership and Corporation Accounting  
ALFRED JACKSON THOMPSON, Elements of Accounting  
ARTHUR FRANCIS O'MALLEY, A.M., Elements of Accounting  
ROBERT BRUCE, M.C.S., Elements of Accounting  
TURNER FLOWERS GARNER, A.B., Business English  
JOHN KERMOTT ALLEN, Advertising  
MATTHEW POROSKY, B.S., Factory Administration  
MERRILL WHITE OSGOOD, Office Organization  
HAROLD ANDREWS THURLOW, Salesmanship  
JOHN VICTOR DAY, Credits and Collections  
WILLIAM JACOB SANDS, A.M., Business English  
ERWIN HASKELL SCHELL, B.S., Business Administration  
FLOYD ELMER ARMSTRONG, M.A., Economics and Finance  
CHESTER CHANDLER STEADMAN, LL.B., Business Law  
GORTON JAMES, A.B., S.B., Mathematics of Accounting  
FRED MILLER, B.S., B.Litt. (Oxon), Business Administration  
WESLEY LEE PAUL, A.B., M.B.A., Retailing  
IRVING LAWRENCE SHAW, State Income Tax  
FREDERICK HILL, State Franchise Tax  
HENRY NATHANIEL ANDREWS, Federal Income Tax

# WORCESTER

## Local Officers of Administration

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CHARLES EDWIN HUTCHINS, LL.B., Assistant Dean  
BARBARA LAW MINER, A.B., Registrar

## Staff of Instruction

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FREDERICK EUGENE BARTH, Office Organization  
HARRY NELSON BROWN, Salesmanship  
WILLIAM GLADSTONE CROMMETT, Business English  
HAROLD LUTHER FENNER, A.B., Corporation Finance, Mathematics of Accounting  
JAMES ARTHUR HURLEY, Credits and Collections, (Manufacturing Credit)  
CHARLES EDWIN HUTCHINS, LL.B., Business Law  
CHARLES HENRY JORDAN, B.C.S., B.S., A.M., Advanced Accounting Problems  
CLYDE LINFIELD NEWELL, Accounting  
HENRY CHARLES OBERIST, System Building  
CHARLES WILLIAM PARKS, B.C.S., Credits and Collections (Banking)  
FLOYD ABNER RAMSDELL, A.B., Salesmanship  
GEORGE GORDON SAMPSON, A.M., Economics  
FREDERICK HENRY SNYDER, Accounting  
RALPH WESLEY WATSON, B.C.S., C.P.A., Auditing  
JAMES WILSON, Credits and Collections (Retail)  
BENJAMIN LEROY WOODBURY, Advertising

# SPRINGFIELD

## Local Officers of Administration

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GUY DOLPHUS MILLER, A.B., C.P.A., Associate Dean  
MILDRED ANNA KING, Registrar

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LUTHER ANDERSON, B.A., M.A., Ph.D., Economics and Finance  
FRANK AUCHTER, LL.B., Business Law  
WILLIAM ROBERTS CARLTON, Elements of Accounting  
JAMES WALTER CROOK, A.B., A.M., Ph.D., Economics and Finance  
JOSEPH CUSHING, B.S., C.P.A., Accounting  
DONALD WALTER DAVIS, A.B., Advertising  
GEORGE ELLSWORTH DAWSON, A.B., Ph.D., Business Psychology



JOSEPH FRANKLIN HOLT, Factory Organization  
WILLIAM WARD JOHNSTON, M.C.S., C.P.A., Accounting  
HARRY HARRIS KING, B.S., C.P.A., Accounting  
STANLEY LIVINGSTONE METCALF, Salesmanship  
GUY DOLPHUS MILLER, A.B., C.P.A., Fundamentals of Business Administration  
HARRY HAYNES PEIRCE, B.A., Business Mathematics  
HORACE JACOBS RICE, A.B., LL.B., Business Law  
HAMILTON TORREY, B.S., Business English  
GILBERT CREIGHTON WALKER, A.B., Accounting

## **BRIDGEPORT**

### **Local Officers of Administration**

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GEORGE WASHINGTON MEDER, B.C.S., C.P.A. Associate Dean

### **Staff of Instruction**

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LEWIS BENTON MATTHIAS, B.S., B.C.S., Accounting and Economics  
GEORGE WASHINGTON MEDER, B.C.S., C.P.A., Accounting  
JOHN JOSEPH O'ROURKE, Salesmanship  
FRANCIS THURSTON PENDLETON, B.A., Accounting  
BERNARD PHINIAS SALTMAN, LL.B., Business Law and Finance  
HAROLD MERWIN STURGES, A.B., Business English

## **PROVIDENCE**

### **Local Officers of Administration**

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ERWIN BRAUN, Assistant Director

### **Staff of Instruction**

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WILLIAM SNOWBALL BELL, M.C.A., Partnership and Corporation Accounting  
MANDELL MORTON BOBER, A.B., A.M., Fundamentals of Business Administration, Corporation Finance  
~~RALPH RAMBO BRADLEY, B.C.S., C.P.A., (Nat. Association), System Building~~  
LUTHER FRANKLIN COBB, Credits and Collections  
CLAUS EMANUEL EKSTROM, Business Psychology

CLAUDE FERGUSON, LL.B., Elements of Accounting  
SIGMUND WALTER FISCHER, A.B., LL.B., Business Law  
JOHN CORTLAND KNOWLES, A.B., Business Law  
GEORGE THOMAS LAMON, Advertising  
WILLIAM FRANKLIN ODOM, Fundamentals of Business Administration  
MATTHEW POROSKY, B.S., Factory Administration  
CHARLES PECK SISSON, A.B., LL.B., Business Law  
JOSEPH SNOW, B.C.S., Advanced Accounting Problems

## **NEW HAVEN**

### **Local Officers of Administration**

JOHN ANDRE BRODHEAD, M.E., Director  
EARL ADOLPHUS SALIERS, M.A., Ph.D., Associate Dean

### **Staff of Instruction**

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JAMES PAUL FOSTER, A.B., M.B.A., Business English and Salesmanship  
EDGAR STEVENSON FURNISS, B.A., Ph.D., Fundamentals of Business Administration  
FRED GEORGE SIMS, B.C.S., Elements of Accounting  
RALPH ANDREWS WESTON, C.P.A., Partnership and Corporation Accounting

## **MALDEN**

### **Local Officers of Administration**

HARRY MAXWELL, Director

### **Staff of Instruction**

ANDREW PIERCE, LL.B., Business Law  
WILLIAM JACOB SANDS, A.M., Business English  
ALFRED JACKSON THOMPSON, Accounting  
WARD WEBSTER, Salesmanship

## **NEWTON**

### **Local Officers of Administration**

HARRY WHITNEY BASCOM, A.B., Director

### **Staff of Instruction**

TURNER FLOWERS GARNER, A.B., Business English  
MAYNARD MAXIM, Accounting  
DANA SCOTT SYLVESTER, LL.B., B.C.S., Business Law

# NORTHEASTERN UNIVERSITY

## Historical Sketch

**T**HE INCORPORATION of Northeastern University of the Boston Young Men's Christian Association in March, 1916, marked the culmination of a notable development. The University is not a new institution, but a realization of an ideal carefully worked out and persistently followed for a period of many years. The Boston Young Men's Christian Association, established in 1851, had as one of its first lines of endeavor evening classes for young men.

It was not, however, until 1896 that the evening school system was placed upon a permanent basis with expert supervision. As courses were being offered in increasingly large numbers, it became evident that a more complete organization should be effected, with the result that the courses were grouped as separate schools, such additional courses being offered as would complete the curricula of the several schools.

The School of Law, established 1898, was incorporated in 1904 with degree granting power. The School of Commerce and Finance, founded in 1907, was incorporated in 1911, and was given the right by the State to grant the Bachelor and Master of Commercial Science degrees. The School of Engineering was opened in 1909, and received in 1920 the right to grant the following degrees: Bachelor of Chemical Engineering, Bachelor of Mechanical Engineering, Bachelor of Electrical Engineering, and Bachelor of Civil Engineering. Affiliated with the University are the Evening Polytechnic School, the Huntington School for Boys and the Northeastern Preparatory School. Divisions of the University have been established at Worcester, Springfield, Bridgeport, New Haven, and Providence.

To more closely co-ordinate the work of the Divisions and Branches throughout New England with the work at Boston, a Regional Committee was organized May 5, 1920, for the purpose of "promoting, financing, supervising, and developing Divisions and

Branches of Northeastern University." This committee is organized so as to insure the most effective and uniform service to all.

## **The School of Commerce and Finance**

From the period of its foundation in 1907 until its incorporation in 1911 the work of the School of Commerce and Finance passed from a series of unrelated short term evening courses into a carefully planned program of instruction.

The first class graduated in 1914. Since that time, 376 students have received the degree of Bachelor of Commercial Science, and 15 men, the Master of Commercial Science.

Up to 1921, the School laid special emphasis upon the curriculum in Professional Accounting. During this period, sixty-five of the graduates passed the examination for Certified Public Accountant. (C.P.A.)

In 1921 the regular four year curriculum leading to the degree of Bachelor of Commercial Science in Business Administration was strengthened. This curriculum was planned to give men the basic general training in the fundamentals of business and to develop them in some particular phase of specialization.

## **Admission of Women**

Women were first admitted to the School of Commerce and Finance at the Worcester Division in 1918. They will, therefore, receive the degree for the first time in Worcester this year, 1922. The Division of Springfield admitted them in 1920. Beginning September, 1922, a limited number of women will be admitted as candidates for the degree at Boston, at all Divisions, except Providence, and at all Branches.

## **Divisions**

Divisions of the School of Commerce and Finance are located at Worcester, Springfield, Providence, New Haven and Bridgeport. Four-year curriculums are being offered in all these cities except New Haven, where three years' work is being given. The fourth year will be offered in 1923-24.

The standard of the work required in the Divisions is identical with that in Boston. In some cases it is necessary to vary the elective courses in the various cities depending upon the local needs of the community. The admission requirements, content of courses, requirements for attendance, scholastic attainment and graduation are the same in all cases.

### **Branches**

Branches of the School are located at Lynn, Cambridge, Newton and Malden. In each of these places only the first year will be offered during 1922-23. In no case will more than two years' work be given in any Branch. Then the student transfers his work to Boston where he completes the upper years. In most cases the faculty of the Branches is identical with the faculty in Boston. The Branches maintain a very close relationship to the School in Boston, so that the transition of the student from the Branch is made with the least possible difficulty.

### **The Organization of the School.**

The school is an evening school of collegiate standards, built around:

1. A carefully co-ordinated and correlated course of study, which gives the student sound training in the basic principles of business.
2. The development of fields of specialization, which meet local needs.
3. A combination of practical experience and of scientific training in business.
4. A faculty of specialists.
5. High ethical standards.

The School of Commerce and Finance of Northeastern University is non-proprietary in character, devoting its energies to building up the best possible type of evening business school for ambitious and worthy men. The school aims at service, and on this alone, it owes its existence as a successful institution.

The school offers training to those who desire to become professional accountants and business men. It also prepares men for educational work. Although they have received a broad cultural training in college, they find that they require scientific training in business principles in order to advance in their professions. The School affords an excellent opportunity for these men to combine business experience with scientific training.

### **Method of Instruction**

Business problems are presented to the class for discussion. The instructor then sums up the conclusions. In this way, the students are given a practical application of the principles involved. The instructor ties up each new subject with what has gone before, so that the students get the proper and logical sequence. In most courses, text or problem books are assigned for outside work. Original problems are also assigned. Each student prepares a solution of such problems and presents them for criticism.

The students are trained in the writing and presentation of reports. The form and structure, as well as the content of these reports, are critically examined by the instructor and returned to the students.

### **The Faculty**

The faculty of the School of Commerce and Finance is composed of men with practical business experience, who are also successful instructors. These men have continually built up the prestige of the School through their ability and standing in their respective professions. To them, the success of the School may be attributed.

### **The Student Body**

The student body is drawn mostly from business and professional men, although almost every vocation is represented.

During the year 1921-22, the distribution of students by ages was as follows:

Under twenty years	12%
Twenty to twenty-four years	50%
Twenty-five to twenty-nine years	23%
Over thirty years	15%

This shows that a very large percentage of the men are relatively mature. Besides, they have considerable business experience and many of them are holding important executive positions.

On the whole, the student body may be divided into two groups:

First, those who have recently graduated from high school but who do not have the means to afford a day school training. They are willing to sacrifice their pleasure for four years because they are ambitious to make their mark in the business world.

Second, those who entered business without a desire to continue their education, but who have found that a scientific training in business will fit them for advancement in their profession. Among this group are to be found executives, heads of departments, college graduates, and others.

### **The Employment Bureau**

The school maintains an Employment Bureau, which keeps graduates and under-graduates in contact with openings in business. A study is made of the nature of the position and a student is selected who will fill that position competently.

As soon as the Employment Bureau is informed of a vacancy, graduates or under-graduates, who are competent to fill the position, are notified. If they are not interested in the position, they report back to the Employment Bureau. If they are interested, and have an interview, they report whether or not they have received the position. If they do not take or receive the position, they inform the Employment Bureau of their findings. In this way, the Employment Bureau is able to check up on the position and the location of its men.

# Admission Requirements

## 1. Regular Students

A candidate for the B. C. S. degree must meet one of the following admission requirements:

- a. He must be a graduate of an approved high school or school of equal grade.
- b. He must have completed satisfactorily fifteen units of work in an approved high school or school of equal grade.
- c. If over twenty-three years of age, he may be admitted:
  1. If he has demonstrated his ability by business experience in responsible positions, and
  2. Passes satisfactorily the Thorndike test in general intelligence for admission to professional schools, and
  3. Passes a satisfactory examination in commercial arithmetic.

NOTE: A student seeking admission as a regular student under rule **c.** must take the necessary examinations and meet the other admission requirements as outlined in this rule at the time of admission to the school; the examinations being taken at such times and under such rules as may be decided upon by the committee on admission.

- d. A student who has been admitted to the school as a special student, not a candidate for the B.C.S. degree (see par. 2 below), and *who is pursuing a regular four year curriculum in the school*, may later be reclassified as a regular student: provided, at the time of reclassification, he shall have qualified so far as meeting either **a** or **b** of the above admission requirements.

A special student who is not taking a regular curriculum, but who is pursuing only a limited number of special courses in the school may, if he desires to transfer to a regular curriculum as a candidate for the degree, qualify under **a**, **b**, or **c** of the above admission requirements. If he has previously sought admission under **c**, and failed, he is permitted to qualify only under **a** or **b**. In order to make up the work required for admission to candidacy for the degree, a student must present evidence of sufficient secondary school work to



meet the admission requirements, or he may take additional courses in the school, subject to the approval of the Committee on Admission—each semester of additional work satisfactorily completed counting as one unit toward admission credit. Not more than six units may be made up in this manner.

## **2. Special Students**

A limited number of students who do not meet the above admission requirements, may be admitted to the school as special students, not candidates for the B.C.S. degree, at the discretion of the Dean and the Committee on Admission. Such students must furnish satisfactory evidence of maturity and of ability to pursue the work of the school. These students may, subject to the approval of the Dean and the Committee on Admission take any of the regular curriculums or such courses or combination of courses as may be desired. In particular, the attention of mature business men, desiring intensive training in specialized fields, is invited to the two year curriculums (see p. 24), leading to the Certificate of Proficiency.

### **Advanced Standing**

Students who have pursued regular courses of instruction in a school of commerce and finance of a recognized college or university, may receive advanced standing, not exceeding three years' credit, by presenting a certificate showing the work completed.

Students, who pass an examination in elementary accounting, may be excused from the Elements of Accounting. This examination presupposes three years' training in bookkeeping in a commercial high school or its equivalent. Students, who desire to take the examination, should make an application on a form provided by the School, and submit such credentials as the Dean and Committee on Admission may require.

### **Registration**

Early registration at the Office of the School is advisable because after the application blanks have been filed in the Office of the School of Commerce and Finance, the credentials must be verified and acted upon before the student's status can be determined. This necessarily requires considerable time.

# Tuition Fees

## Boston

### Freshman Year

Application:	
Payable on filing application for admission	\$5.00
Tuition:	
September 25	30.00
November 20	30.00
February 1	30.00
	<hr/>
<b>TOTAL</b>	<b>*\$95.00</b>

### Sophomore Year

Tuition:	
September 25	30.00
November 20	30.00
February 1	30.00
	<hr/>
<b>TOTAL</b>	<b>*\$90.00</b>

### Junior Year

Tuition:	
September 25	35.00
November 20	35.00
February 1	30.00
	<hr/>
<b>TOTAL</b>	<b>*\$100.00</b>

### Senior Year

Tuition:	
September 25	35.00
November 20	35.00
February 1	30.00
	<hr/>
<b>TOTAL</b>	<b>*\$100.00</b>

\*The tuition fee includes a limited Y. M. C. A. membership.

## UNIT COURSES

### Whole Year Courses

Application	\$5.00
Advanced Accounting Problems	40.00
System Building	40.00
Cost Accounting	40.00
Auditing	40.00
Other Courses (each)	32.00

### Semester Courses

Application	5.00
Tuition—each course	16.00
<b>Examinations</b>	
Intelligence Tests for Admission	2.00
Examinations to Remove Conditions	2.00

## **Withdrawals and Refunds**

Students who are forced to withdraw from the School are requested to notify the school office in writing to the effect that they are withdrawing and giving their reasons for doing so. This notification should be given promptly.

As the School assumes the obligation of carrying the student throughout the year when the student registers, and as the University provides the instruction and accommodations on a yearly basis, the Executive Council of the University has ruled as follows:

- A. Applications for refunds must be presented within sixty days after withdrawal from the School.
- B. Credits and refunds will be granted only as stated below:
  - 1. The unused portion of the tuition paid by the applicant may be placed in suspense and used at some future time to apply upon the tuition of any school in Northeastern University. This is done provided the reasons set forth in the application meet the approval of the Committee on Refunds, and on the further condition that the credit be used within two years.
  - 2. Cash refunds may be granted only in cases where students are compelled to withdraw on account of personal illness. The application must be accompanied by a satisfactory certificate from the physician.

In the event of withdrawal after initial application for admission has been filed no refund is made of the five dollar application fee.

## **Requirements for Degrees**

Candidates for graduation should file their applications in the School Office not later than the first of March in the year in which they plan to receive the degree.

### **THE BACHELOR OF COMMERCIAL SCIENCE DEGREE**

- 1. Candidates for the degree of Bachelor of Commercial Science must complete all the term work in twenty-four semester courses with a grade of at least 60%.

2. They must pass the final examinations in these courses with a grade of at least 60% (D) and attend 75% of the lectures in each course; or pass their final examinations with a grade of 70% (C) and attend between 50 and 75% of the lectures. (See attendance requirements).

### **THE MASTER OF COMMERCIAL SCIENCE DEGREE**

Candidates for the degree of Master of Commercial Science must fulfill the following requirements:

1. (a) Graduates of schools of commerce and finance of recognized colleges and universities must complete twelve semester courses with a grade of 85% (B).  
(b) Graduates of colleges of liberal arts and scientific schools must complete eighteen semester courses with a grade of 85% (B). The Elements of Accounting, Marketing, Business Finance, Commercial Law, Business Statistics, and Factory Administration are required and give a total of twelve semester courses. The remaining six semester courses may be taken in some field of specialization.
2. They must carry on research and present the result in thesis form. The thesis must be satisfactory to a Board of Examiners appointed by the Dean.
3. They must pass an oral examination in their special field of research.

### **Graduation with Honors**

Students who desire to compete for honors must complete their work in four academic years. Those who complete all the required work with an average of 80% will be graduated with honor. Those who complete all the required work with an average of 90% will be graduated with highest honor.

### **The Certificate of Proficiency**

The Certificate of Proficiency will be granted to those who have completed one of the two year curriculums.

# Curriculum Requirements

## Professional Accounting

This curriculum is intended to prepare for professional accounting. It offers thorough preparation to those who desire to pass the examination, given by the American Institute of Accountants, for Certified Public Accountant. Between 1915 and 1921, sixty-five of the graduates of the School received the C.P.A. Today, many of them are leaders in the accounting profession.

While intended to prepare for professional accounting, this curriculum does not limit itself to training students to handle technical accounting terms, methods and records. Sufficient economic and legal background is worked into the course to enable the student to analyze business phenomena.

Many of the graduates of this School, who have taken the curriculum in Professional Accounting, have not entered the public accounting field, but are today engaged in commercial and industrial accounting. The curriculum in Business Administration (see page 00) provides particularly for specialization in commercial and industrial accounting and gives greater emphasis to the analysis and interpretation of the economic principles underlying business enterprise than does the curriculum in Professional Accounting; either curriculum furnishes, however, an excellent training for the field of commercial and industrial accounting.

### FIRST YEAR

	Hours a week	Total
FIRST SEMESTER		
Elements of Accounting (101) . . . . .	4	64
Fundamentals of Business Administration (151) .	2	32
SECOND SEMESTER		
Elements of Accounting (102) . . . . .	2	32
Business English (135) . . . . .	2	32
Fundamentals of Business Administration (152) .	2	32

### SECOND YEAR

FIRST SEMESTER		
Partnership and Corporation Accounting (201) .	4	64
Contract and Agency Law (210) . . . . .	2	32

**SECOND SEMESTER**

Partnership and Corporation Accounting (202)	4	64
Partnership and Corporation Law (211)	2	32

**THIRD YEAR\*****FIRST SEMESTER**

Advanced Accounting Problems (301)	2	32
System Building (303)	2	32
Mathematics of Accounting (406)	2	32

**SECOND SEMESTER**

Advanced Accounting Problems (302)	2	32
System Building (304)	2	32
Sales, Negotiable Instruments, etc. (312)	2	32

**FOURTH YEAR\*****FIRST SEMESTER**

Cost Accounting (401)	2	32
Auditing (403)	2	32
Income Taxes (405) or Factory Administration (449)	2	32

**SECOND SEMESTER**

Cost Accounting (402)	2	32
Auditing (404)	2	32
Corporation Finance (321) or Office Organization (340)	2	32

\*The third and fourth years are alternated at Springfield, Worcester, Providence, Bridgeport, and New Haven.

**Business Administration**

Certain courses are fundamental to a general training in business administration. For this reason, the Elements of Accounting, Business English, Fundamentals of Business Administration, Marketing, Business Finance, Office Organization, Factory Administration, Business Statistics and Business Law are required in all business administration curriculums. The remaining courses are elective; for instance, a student, in his second year, may elect Traffic Management instead of Banking.

Not only does the student need a general training in the fundamentals of business, but he should select a field for specialization which should follow a definite and logical plan so that the student

may get a well-balanced training in the field of his choice. If a student desires to specialize in Retailing, obviously he should have training in Credit, Business Letters and Reports, Business Psychology, Advertising, and Salesmanship, in addition to Retail Accounting and Retail Store Management. This example illustrates how related courses are built into a curriculum to give the student a specialized training in his particular field.

## General Business Administration

### FIRST YEAR

	Hours a week	Total
<b>FIRST SEMESTER</b>		
Elements of Accounting (101) . . . . .	4	64
Fundamentals of Business Administration (151) .	2	32
<b>SECOND SEMESTER</b>		
Elements of Accounting (102) . . . . .	2	32
Business English (135) . . . . .	2	32
Fundamentals of Business Administration (152) .	2	32

### SECOND YEAR

<b>FIRST SEMESTER</b>		
Marketing (251) . . . . .	2	32
Business Finance (253) . . . . .	2	32
Banking (255) . . . . .	2	32
<b>SECOND SEMESTER</b>		
Marketing (252) . . . . .	2	32
Office Organization (340) . . . . .	2	32
Banking (256) . . . . .	2	32

### THIRD YEAR

<b>FIRST SEMESTER</b>		
Contract and Agency Law (210) . . . . .	2	32
Factory Administration (449) . . . . .	2	32
Credits and Collections (431) or Business Letters and Reports (136) . . . . .	2	32
<b>SECOND SEMESTER</b>		
Partnership and Corporation Law (211) . . . .	2	32
Factory Administration (450) . . . . .	2	32
Salesmanship (331) or Business Psychology (134) . . . . .	2	32

## FOURTH YEAR

### FIRST SEMESTER

Business Statistics (451) . . . . .	2	32
Select two:		
Labor Problems (457) . . . . .		
Traffic Management (455) . . . . .	4	64
Advertising (447) . . . . .		

### SECOND SEMESTER

Business Statistics (452) . . . . .	2	32
Select two:		
Labor Problems (458) . . . . .		
Traffic Management (456) . . . . .	4	64
Advertising (448) . . . . .		

## Specialization in Retailing

Students should follow the General Administration Curriculum during the first year.

## SECOND YEAR

	Hours a week	Total
<b>FIRST SEMESTER</b>		
Marketing (251) . . . . .	2	32
Business Finance (253) . . . . .	2	32
Retail Accounting (203) . . . . .	2	32
<b>SECOND SEMESTER</b>		
Marketing (252) . . . . .	2	32
Office Organization (340) . . . . .	2	32
Retail Accounting (204) . . . . .	2	32

## THIRD YEAR

### FIRST SEMESTER

Contract and Agency Law (210) . . . . .	2	32
Factory Administration (449) . . . . .	2	32
Select one:		
Credits and Collections (431) . . . . .		
Business Letters and Reports (136) . . . . .	2	32
Banking (255) . . . . .		

### SECOND SEMESTER

Partnership and Corporation Law (211) . . . . .	2	32
Factory Administration (450) . . . . .	2	32
Select one:		
Credits and Collections (432) . . . . .		
Business Psychology (134) . . . . .	2	32
Banking (256) . . . . .		



### FOURTH YEAR

	Hours a week	Total
<b>FIRST SEMESTER</b>		
Retailing (453) . . . . .	2	32
Business Statistics (451) . . . . .	2	32
Advertising (447) . . . . .	2	32
<b>SECOND SEMESTER</b>		
Retailing (454) . . . . .	2	32
Business Statistics (452) . . . . .	2	32
Advertising (448) or Salesmanship (331) . . . . .	2	32

### Specialization in Commercial and Industrial Accounting

Students should follow the Professional Accounting Curriculum during the first and second years.

### THIRD YEAR

	Hours a week	Total
<b>FIRST SEMESTER</b>		
System Building (303) . . . . .	2	32
Marketing (251) . . . . .	2	32
Business Finance (253) . . . . .	2	32
<b>SECOND SEMESTER</b>		
System Building (401) . . . . .	2	32
Marketing (252) . . . . .	2	32
Office Organization (340) . . . . .	2	32

### FOURTH YEAR

<b>FIRST SEMESTER</b>		
Cost Accounting (401) . . . . .	2	32
Factory Administration (449) . . . . .	2	32
Business Statistics (451) . . . . .	2	32
<b>SECOND SEMESTER</b>		
Cost Accounting (402) . . . . .	2	32
Factory Administration (450) . . . . .	2	32
Business Statistics (452) . . . . .	2	32

### Additional Fields of Specialization

Students interested in any of the fields of specialization listed below are advised to make arrangements at the school office in order that a curriculum may be drawn up to meet their special needs:

Merchandising	Manufacturing	Foreign Trade
Banking	Advertising	Labor Problems
Transportation	Finance	Statistics

## SPECIAL TWO YEAR CURRICULUMS

The special two year curriculums are planned for men with business experience, who desire a short, intensive period of training. The curriculums given below outline courses which will give a man training in Retailing, Traffic Management, and Mercantile Accounting.

### Retailing

#### FIRST YEAR

	Hours a week	Total
<b>FIRST SEMESTER</b>		
Elements of Accounting (101) . . . . .	4	64
Marketing (251) . . . . .	2	32
<b>SECOND SEMESTER</b>		
Elements of Accounting (102) . . . . .	2	32
Business English (135) . . . . .	2	32
Marketing (252) . . . . .	2	32

#### SECOND YEAR

<b>FIRST SEMESTER</b>		
Retailing (453) . . . . .	2	32
Select two:		
Business Statistics (451) . . . . .		
Credits and Collections (431) . . . . .		
Advertising (447) . . . . .	4	64
Accounting (203) . . . . .		
Business Letters and Reports (136) . . . . .		
<b>SECOND SEMESTER</b>		
Retailing (454) . . . . .	2	32
Select two:		
Business Statistics (452) . . . . .		
Credits and Collections (432) . . . . .		
Advertising (448) . . . . .	4	64
Salesmanship (331) . . . . .		
Business Psychology (134) . . . . .		
Accounting (204) . . . . .		

### Traffic Management

#### FIRST YEAR

<b>FIRST SEMESTER</b>		
Elements of Accounting (101) . . . . .	4	64
Fundamentals of Business Administration (151)	2	32

	Hours a week	Total
<b>SECOND SEMESTER</b>		
Elements of Accounting (102) . . . . .	2	32
Business English (135) . . . . .	2	32
Fundamentals of Business Administration (152) .	2	32

## SECOND YEAR

<b>FIRST SEMESTER</b>		
Traffic Management (456) . . . . .	2	32
Select two:		
Business Letters and Reports (136) . . . . .		
Marketing (251) . . . . .	4	64
Factory Administration (449) . . . . .		

<b>SECOND SEMESTER</b>		
Traffic Management (456) . . . . .	2	32
Select two:		
Business Psychology (134) . . . . .		
Marketing (252) . . . . .	4	64
Factory Administration (450) . . . . .		
Salesmanship (331) . . . . .		

## Mercantile Accounting

### FIRST YEAR

	Hours a week	Total
<b>FIRST SEMESTER</b>		
Elements of Accounting (101) . . . . .	4	64
Fundamentals of Business Administration (151) .	2	32

<b>SECOND SEMESTER</b>		
Elements of Accounting (102) . . . . .	2	32
Office Organization (340) . . . . .	2	32
Fundamentals of Business Administration (152) .	2	32

### SECOND YEAR

<b>FIRST SEMESTER</b>		
Partnership and Corporation Accounting (201) .	4	64
Contract and Agency Law (210) . . . . .	2	32

<b>SECOND YEAR</b>		
Partnership and Corporation Accounting (202) .	4	64
Partnership and Corporation Law (211) . . . .	2	32

Similar curriculums will be arranged for students who desire to specialize in any of the following fields:

Merchandising	Manufacturing	Foreign Trade
Banking	Advertising	Labor Problems
Transportation	Finance	Statistics

### **Unit Courses**

Special students may register for unit courses; that is, students may feel that they desire training in Accounting or in another subject. Such students are permitted to concentrate in one particular field without studying any of the allied courses. The following unit courses are suggested: Accounting, Finance, Banking, Advertising, Salesmanship, Marketing, Credits and Collections, Business Psychology, Office Management, Factory Administration, Business Statistics, Business English, Business Letters and Reports, Traffic Management, and Labor Problems.

# Outline of Courses

## ACCOUNTING

**Elements of Accounting 101-2.** Four hours each week during the first semester and two hours each week during the second semester.

This subject is required throughout the Freshman year of the four-year course. It is designed to cover the fundamental principles of accounting theory and practice and may be taken with profit by beginners and those having some knowledge of the subject. Commencing with the most simple proposition in double entry bookkeeping, it concludes with work beyond the knowledge of the ordinary bookkeeper. A large amount of home work is given, supplemented by lectures and problems in class.

### Theory of Accounts

Theory of debit and credit as applied to the ledger; use of the journal; posting from the journal to the ledger; the trial balance and its errors; functions of accounts; profit and loss statement; the balance sheet, what it shows and how to read it. Division of journal into cash book, sales book, purchase book and general journal; percentage, interest and discount; turnover. Negotiable paper; practice in making notes, drafts and checks; reconciliation of bank statement with check book balance, controlling accounts.

### Practical Accounting

Problems performed in class consisting of trial balances, profit and loss statements and balance sheets, closing entries for single proprietorships and partnerships; working sheets and goodwill; adjusting entries for depreciation, reserves, obsolescence, deferred charges to profit and loss and expense distribution.

A complete set of single proprietorship books including banking operations. Admission of a partner and complete set of partnership books.

**Partnership and Corporation Accounting 201-2.** Four hours each week throughout the year.

Problems and sets illustrating the principles and practices in Single Entry, Partnership, and Corporation are assigned for home work. Class lectures cover the theory of these subjects.

### Single Entry

Set to be worked. Problems in making financial statements from single entry books.

## **Partnership**

Organization; admission of a partner; good-will; adjustment of capital account; insurance on a partner's life; division of profits; sale as a going concern; dissolution; liquidation. Set to be worked, covering the above principles and including depreciation and adjusting entries.

## **Corporation**

State laws relating to business corporations; organization; kinds of stock; books and records; distinctive corporation accounts; treasury stock; dividends; incorporating a going concern; bond issues; bond premiums and discounts; bond interest, sinking funds; redemption of bonds; surplus and reserve funds; corporation statements. Set to be worked covering the above principles with adjusting entries.

Distinctive manufacturing accounts; manufacturing statements; consolidated balance sheet; receivership and bankruptcy; reorganization; dissolution of a corporation.

**Retail Accounting 203-4.** Two hours each week throughout the year.

**Advanced Accounting Problems 301-2.** Two hours each week throughout the year.

This course consists of lectures, demonstrations, and discussions on the accounting principles involved in problems selected from past C.P.A. examinations. It is intended as a preparatory course for the C.P.A. examinations as well as a further study of advanced accounting.

Review of classification of accounts; form and arrangement of statements; partnership organization; settlements and adjustments; advanced corporation exercises including organization, bond issues and sinking funds; consolidations; holding companies; re-organization; accounting for trustees and executives; branch houses; foreign exchange; receivership and bankruptcy; realization and liquidation accounts; manufacturing and cost accounts; special investigation; theory quizzes from recent C.P.A. examinations.

**System Building 303-4.** Two hours each week throughout the year.

General problems in designing and installing systems; preliminary investigation; commercial papers; rulings. Auto Sales Company—general conditions and plan of operation; forms, assets and liabilities; income accounts; expense accounts. Grocery Company—forms, assets and liabilities, income accounts, expense accounts. Club Set—general plan, forms, assets and liabilities, income accounts, expense accounts. Leather Company—general plan. Institutional Accounting—general plan of hospital accounts, forms, assets and liabilities, operating accounts, reports.

**Cost Accounting 401-2.** Two hours each week throughout the year.

The object of this course is to familiarize the student with the chief principles relating to the design of accounting systems for manufacturing concerns, with special references to the finding of production costs. All systems used for instruction purposes are drawn from current practice.

Relation of cost accounting to general accounting; advantages of a cost system; classification of costs; establishing a cost basis; methods of controlling cost; records; departmentalization; order systems; purchase and receiving records; stock records; requisitions; ordering quantities; inventories; pay-roll; calculation and application of departmental burden rates; distribution of expense accounts; types of cost systems; defective work losses; absorbing burden rates; graphic production control; relation of cost accounting to management.

**Auditing 403-4.** Two hours each week throughout the year.

The course deals with auditing problems as applied to mercantile and manufacturing enterprises. It is a combination of lectures, quizzes, and problem work, the problems being based upon C.P.A. questions.

Balance sheet audits; complete audits; continuous audits; special examinations; the audit of balance sheet accounts; the audit of expense accounts; analysis of accounts; the mechanical work of auditing; special types of business including mercantile, manufacturing, insurance, financial institutions, clubs, insurance companies, etc.; the preparation of audit programs and audit reports.

**Income Taxes 405.** Two hours each week during one semester.

This course deals with the State and Federal income taxes. It is a combination of lectures, quizzes, and problem work. Students are instructed in handling actual forms.

**Mathematics of Accounting 406.** Two hours each week during a semester. (Given both semesters in Boston and one semester only in the Divisions).

Bank discount; equation of payments and accounts; logarithms; compound interest and present worth; annuities; bonds, optional redemption; serial bonds; valuation of assets; perpetuities; amortization; sinking funds; depreciation; wearing value of an asset; composite life of a plant; discussion of graphs; the use of the slide rule; and foreign exchange.

## LAW

**Contract and Agency Law 210.** Two hours each week during one semester. (Omitted during 1922-23).

### Contracts

Classification of contracts; offer and acceptance; validity of assent; consideration; legality; form; construction; operation; discharge.

**Agency**

Definition and distinction; appointments; ratification; mutual rights and duties; authority; liability to third parties; termination of agency.

**Partnership and Corporation Law 211.** Two hours each week during one semester.

**Partnership**

Definition and general nature; partnership contract; firm name; capital and property; mutual rights and obligations of partners; the partnership and third parties; dissolution of partnership.

**Corporation**

Definition; formation; stock and stockholders; directors and officers; powers of corporations; foreign corporations; dissolution of corporations.

**Sales, Negotiable Instruments, etc., Law 312.** Two hours each week during one semester.

**Sales of Personal Property**

Parties; subject matter; price; form; warranties; transfer of title; rights of third parties; performance of contracts; remedies for breach.

**Bills and Notes (Negotiable Instruments Act)**

Forms of negotiable instruments; provisions affecting negotiability; consideration; acceptor; accommodation endorsements; negotiation; holder in due course; presentation for payment; dishonor, protest; discharge.

**Real Estate and Probate Law**

Difference between real and personal property; law of fixtures; estates in real property; fee simple; life estates; landlord and tenant; remainders and reversions; estates in trust; mortgages; easements; title by deed; title by descent and devise; administration of estates; conveyance.

**Bankruptcy**

Purpose of the bankruptcy law; acts of bankruptcy, voluntary and involuntary bankruptcy; receiver and trustee; proof; claims; dividends; compositions; duties and rights of a bankrupt; his exemption; his discharge.

## **FINANCE**

**Business Finance 253.** Two hours each week during one semester. (Omitted in 1922-23 unless 30 students apply).

Principles of financing; the corporation; owned and borrowed capital; basis of capitalization; securing capital; source of funds, promotion, selling securities, underwriting; financial management; investment of capital funds, calculation requirements for working capital, determination of net income, dividends, surplus, budgets, standards; financial abuses and involvements; exploitation by officers, directors and majority stock-holders; insolvency and receivership; reorganization.



**Corporation Finance 321.** Two hours each week during one semester. (Omitted in 1922-23).

I. Corporate securities: capitalization, common stocks, preferred stocks, bonds, equipment obligations, and convertible issues. II. Promotion: promoter, the banker's contribution, the financial plan, underwriting syndicates, and the marketing of investment securities. III. Administration of income: the cost of borrowed capital, surplus, special reserves; dividends, treatment of sinking fund reserves, the voting trust. IV. Expansion: law of balanced returns, community of interests, and industrial combinations. V. Failure and reorganization; cause of failures, procedure in reorganization, and industrial reorganization.

## **BUSINESS ADMINISTRATION**

**Office Organization 340.** Two hours each week during one semester.

The office manager's job; office layout; principles of standardization; daily, weekly and monthly job schedules; production control systems; job analysis; personnel methods; standardization of the correspondence and mailing division; standardization of a credit and collection division; application of the principles of scientific management to non-productive work (with lantern slides).

**Factory Administration 449.** Two hours each week during the first semester.

Factory organization; planning the product; handling the materials; perpetual inventory systems; ordering function; production methods, cost department; foreman; labor management; planning department; building and equipment; relation of production department to sales department.

**Fundamentals of Business Administration 151-2.** Two hours each week throughout the year.

In this course a study is made of the principles underlying business enterprise. The following topics will be discussed: (a) industrial development and its effect upon industrial organization; (b) the principles of consumption, supply and demand, price, value, exchange; (c) the production and distribution of commodities; (d) facilitating agencies, money, monetary systems, banking, transportation, insurance, etc.; (e) the distribution of wealth, interest, wages, rent and profits; (f) canon of taxation, direct and indirect, tariff, income and inheritance taxes; (g) social problems.

**Business Psychology 134.** Two hours each week during one semester.

This course will deal principally with executive control and employee problems.

1. The technique of executive control: the trend of management; prerequisites of the executive; the impulses and desires of workmen; the development of

executive traits; the instruments of management; arousing interest and incentive; and the maintenance of control. 2. Employee problems: discipline, co-operation; and records.

**Marketing 251-2.** Two hours each week throughout the year.

The functions and activities of the agencies of distribution are analyzed; that is, the manufacturer, merchant, wholesaler and retailer. A study is made of the problems of distribution of selected commodities. This course is conducted by lectures, discussions of problems, outside readings and reports.

**Banking 253-4.** Two hours each week throughout the year.

**Salesmanship 331.** Two hours each week during one semester.

Economics in selling; factors in selling; psychology in selling; man power in selling; knowing the goods; building the selling power; judging the customer's nature; winning the customer's confidence; obtaining an audience; arousing the customer's interest; inducing the desire to buy; getting decision and action; handling objections; personal analysis; putting art into selling; and maintaining poise and power.

**Credits and Collections 431-2.** Two hours each week throughout the year.

Credit obligations; trade acceptance; financial statements; sources of information; collection correspondence; adjustment and causes of failure; credit insurance; retail credits; collection of retail accounts; bank credits; credit problems; collections; adjustment and extension; insolvency; bankruptcy; law and proceedings; proceedings of creditors; claims; discharge of bankruptcy; commercial ethics; distinguishing characteristics of a successful credit manager; the National Association of Credit Men.

**Advertising 447-8.** Two hours each week throughout the year.

Development of advertising; advertising as a business force; the advertiser, the product and the consumer; how the senses help the advertiser; how the advertiser avails himself of instincts; the part in advertising performed by imagination; what memory is and how it assists in making advertising effective; the state of mind called "attention"; the effect of color and its use in advertising; the action of color in securing attention to advertising; the use of type in advertising; the purpose of illustrations and their preparation; intelligent choice of methods of illustration; the trade-mark as a standardizer in quality and price; the advertising manager; his preparation and his duties; an advertising campaign and what it involves; fixing the advertising appropriation; available advertising media and their profitable uses; selecting an advertising agency; getting your products sold through advertising; advertising design and display, making desire and habit do your work in selling by advertising; how to get crowd to respond; the necessary elements of advertising English; the selection of the particular style of language to reach a certain group; the writing of letters that sell; the ethics of advertising; positions in the advertising world and how to obtain them.

**Business Statistics 451-2.** Two hours each week throughout the year.

This course is intended to give the student the principles involved in collection, presentation, and interpretation of statistics. These principles are applied to concrete problems of specific types of business and to a study of the general trend of business. A study is made of the statistics which tend to show changes in business conditions. Business indices and barometers, which are at present used, will be discussed. Students will be assigned problems which will give them a practical application of the principles brought out in the class discussions. They will also be given instructions in the presentation of statistics.

**Retailing 453-4.** Two hours each week throughout the year.

This course deals with the practical problems of retailing. Emphasis is placed upon the classification of merchandise, stock control, selling policies and advertising. A study is made of stock from the point of view of receiving, marking, records, inventories and shortages. Buying: sources and methods.

Administration: personnel, promotion, salaries and wages. Financial and statistical control.

**Traffic Management 455-6.** Two hours each week throughout the year.

This course deals with the problems of traffic management from the point of view of the railroads, and the shipper. A special study is made of the problems confronting the traffic manager in immediate lines of business.

**Labor Problems 456-7.** Two hours each week throughout the year.

## **BUSINESS ENGLISH**

**Business Letters and Reports 136.** Two hours each week during one semester.

Effective industrial correspondence and forms. This course, beginning with the mechanical phases of letter writing, rapidly advances to the study of application letters, inquiry, complaint, and adjustment letters. Stress is laid on sales letters and collection letters and methods. The psychology of selling from the letter of application to special sales letters, language adapted to the specific demand; flexible sentences and paragraphs—these fundamentals are presented and practiced to the fullest extent possible.

**Business English 135.** Two hours each week during one semester.

For the students of Accounting, this course stresses the business report, commercial description, clear exposition or explanation. It treats of certain technical phrases which accountants must use, from accounting business and commercial law. Financial statements, balance sheets, letters of application, sales letters; sentence and paragraph structure—all are subordinated to clean, clear phrasing.

For the students of Administration, this course emphasizes the business report, clear exposition, sentence and paragraph structure. Equal stress is laid on the psychology of selling direct by mail, on the principles and practice of letters of application, credit, collection, adjustment. The sales letter receives close attention—the form, the diction, the controlling idea, the psychological appeals, follow-up methods.

# General Information

## The School Year

1. The school year is divided into two semesters of sixteen sessions each.
2. A semester course consists of sixteen sessions of two hours each, exclusive of the final examination.
3. A full course consists of thirty-two sessions of two hours each, exclusive of the final examination.

## Reports

Reports of a student's progress are issued four times a year; on the first of December, February, April, and June.

## Grades

The following system of grading has been adopted by the School:

A	90-100%
B	80-89
C	70-79
D	60-69
F	Failure

## Attendance Requirements

1. The student must attend at least one-half of the sessions in a course in order to be permitted to take the examination therein. No exception is made to this rule.
2. If the student attends at least three-fourths of the sessions in a course, he is entitled to take the examination therein and will pass if he attains a grade of 60 per-cent.
3. If the student attends between one-half and three-fourths of the sessions in a course, he must furnish satisfactory excuse to the Committee on Attendance for the absence under three-fourths in order to be permitted to take the examination therein; and, further, he must attain a grade of 70 in order to pass in such examination.

4. In order to receive credit for attendance at a session, a student must be present in the classroom during the entire period, unless, upon satisfactory excuse, his presence for a shorter period is accepted by the Committee on Attendance.

## **Examinations**

1. Final examinations in first semester courses are given during the seventeenth week of the term.

2. Final examinations in second semester courses are given during the thirty-fourth week of the term.

3. Final examinations are given in full year courses during the thirty-third week of the term, except in System Building, in which no final examination is given.

4. All the term work must be completed before a student can receive credit in any course.

5. In order to be permitted to take the final examinations in a course, the student must qualify by an attendance of at least 50%. (See Attendance Requirements).

6. If a student, for good cause, does not take the final examination in a course, he may take it at the next scheduled examination in that subject and receive credit as though it were the final examination.

## **Re-Examinations**

1. Re-examinations for Seniors will be given in the spring, and for under-classmen in September (See Calendar).

2. A student is also allowed to make up a condition by taking the next final examination given in the course in which he is conditioned.

3. A student who fails the final examination in a course shall not receive more than 60% on the re-examination.

4. A student cannot take a re-examination in order to raise his grade.

## **Schedule of Re-Examinations—1922**

### **September 11**

- Elements of Accounting (101-2)
- Partnership and Corporation Accounting (201-2)
- Business English (135)
- Advanced Accounting Problems (301-2)
- Business Psychology (134)

### **September 12**

- Contracts and Agency Law (210)
- Partnership and Corporation Law (211)
- Sales, Negotiable Instruments, etc. (312)

### **September 13**

- Economics (132)
- Corporation Finance (321)

### **September 14**

- Principles of Business (131)
- Salesmanship (331)

### **September 15**

- Industrial Analysis (133)
- Credits and Collections (431-2)
- Advertising (447-448)

## **Promotion**

1. Students cannot be classified as Seniors until all conditions have been removed.
2. Under-classmen may be promoted to the next higher class provided that they do not have conditions exceeding two semester courses of more than one year's standing.

## **Buildings**

The School of Commerce and Finance is housed in the Y.M.C.A. Buildings in Boston, Worcester, Springfield, Providence, Bridgeport, New Haven, Lynn, Cambridge, Malden and Newton.

## **Classrooms**

Adequate, well-lighted, heated and ventilated classrooms are provided.

## **Dormitories**

In each Y. M. C. A. Building, students may secure comfortable and well furnished rooms at a minimum price. There is a congenial atmosphere of fellowship and of social life in the dormitories, and opportunities are available for forming friendships.

## **Physical Training**

Each building has unexcelled facilities in the nature of gymnasiums, swimming pools, and bowling alleys. Opportunities are provided for practically every physical activity. School of Commerce and Finance men are urged to avail themselves of the opportunities for physical training. It is especially necessary that men who are employed during the day and studying in the evening take some kind of adequate exercise in order that they may do the most effective school work.

## **Reduced Gymnasium Rates to Students**

In order to insure the use of the gymnasium and to bring it within the means of all students, special reduced rates are granted to School of Commerce and Finance students.

## **Other Recreative Opportunities**

Other recreative opportunities of widely varied nature are offered in the form of billiard rooms, libraries, game rooms, and other facilities. In fact the Y. M. C. A.'s in which the School of Commerce and Finance is located are equipped for almost every type of clear, virile, and wholesome activity.

## **Social Life of the School**

The constant association with other men of outstanding ability from nearly every type of human activity, is of incalculable value to the student. In addition to the usual classroom contacts, men are also brought together at special lectures, class dinners, and other school functions which are highly profitable and pleasurable.

## Alumni Association

### GRADUATES OF THE SCHOOL OF COMMERCE AND FINANCE

The School maintains an active Alumni Association. The organization sustains a vital interest in the University. The members study its problems, offer constructive suggestions, and otherwise keep in close touch with the school.

### EMPLOYMENT SERVICE

Regularly organized, with active officers, the Alumni have an established Employment Service. This bureau attempts not only to place any unemployed member in a position, but also to advance those already employed to better positions. Some of the members have attained important executive rank; others have influential acquaintance with leading business houses; a proportionally large number are in business for themselves. Accordingly, a broad field of opportunity exists, in which each alumnus is of valuable assistance to others of the Association. This service is rendered in the spirit of comradeship and fraternalism.

### OFFICERS 1921-22

President, GEORGE L. HOFFACKER

Vice-President, JOSEPH A. DUDLEY

Secretary, ROBERT BRUCE

Treasurer, R. O. KEATING

Address, 316 Huntington Avenue  
Boston, Massachusetts



# Graduates of the School of Commerce and Finance

## 1914—Bachelor of Commercial Science

Daniel Asher, B.S., LL.B., Worcester  
 \*Thomas H. Burton, Winchester  
 Einar W. Christenson, C.P.A., (N. H.),  
 Arlington  
 George S. Clarkson, C.P.A., (Mass.), Roxbury  
 William S. Cooper, Medford  
 Charles H. Cornell, C.P.A., (Mass.), Chelsea  
 William B. Cushing, Newton  
 Frederick W. Davison, Dorchester  
 William L. Esterberg, C.P.A. (Mass.), Reading  
 Herbert Fallon, Dorchester  
 Harry H. Ferngold, East Boston  
 Herbert C. Fraser, Watertown  
 \*Benjamin W. Fuller, Milton  
 Guy L. Harvey, Boston  
 Edgar P. Hawes, Roslindale

Raymond O. Keating, Woburn  
 Joseph A. Kuebler, Winthrop  
 \*William J. Lyons, Boston  
 William J. Magee, C.P.A., (Mass.), Boston  
 Harvard L. Mann, C.P.A., (Mass.), East Ded-  
 ham  
 Harold J. Parsons, A.A., Worcester  
 Abijah Pearson, Roxbury  
 Isaac Rich, Roxbury  
 Charles F. Rittenhouse, C.P.A., (Mass. and  
 N. H.), Jamaica Plain  
 William D. Smith, C.P.A., (Mass.), Dorchester  
 Walter F. Spinney, Allston  
 Maurice B. Spinoza, Roxbury  
 \*Charles E. Stearns, C.P.A., (Mass.), Boston  
 Robert M. Taylor, West Somerville

## 1915—Bachelor of Commercial Science

Clarence E. Akerstrom, Medford  
 Benjamin Asher, Worcester  
 Robert Bruce, Roxbury  
 Philip F. Clapp, C.P.A., (Mass. and N. H.),  
 Roxbury  
 Wilfred A. Clark, Medford  
 Casper Cohen, C.P.A., (Mass.), Chelsea  
 James B. Conway, Boston  
 Albert B. Curtis, Roxbury  
 Royal M. Cutler, C.P.A., (N. H.), Brockton  
 Willis H. Doe, C.P.A., (N. H.), Medford  
 Henry T. Dolan, Salem  
 Clifton W. Gregg, C.P.A., (N. H. and Mass.),  
 Beverly  
 Milburn D. Hill, Salem  
 Edward I. Hollander, Chestnut Hill  
 Robert H. Hunter, Dorchester  
 Edward S. Jenkins, Quincy  
 \*Irving E. Jones, Brighton  
 James S. Kennedy, Everett  
 Martin C. Lee, South Boston  
 John C. Lord, Brookline

Myron F. Lord, Dorchester  
 Frank L. McCarthy, Arlington  
 Edwin E. McConnell, C.P.A., (N. H.), Hyde  
 Park  
 Ralph C. MacDonald, Walpole  
 William A. Mansfield, Somerville  
 Lester C. Nutting, West Roxbury  
 Herbert L. Perry, West Somerville  
 James C. Purinton, Beverly  
 Edward C. Richardson, Waltham  
 James F. Rockett, Boston  
 William W. Sharpe, Forest Hills  
 Dale M. Spark, C.P.A., (Mass.), Dorchester  
 Ralph G. Stetson, Boston  
 Frank J. Sullivan, South Boston  
 Dana S. Sylvester, LL.B., Brookline  
 William E. Tierney, Lawrence  
 \*Earle P. Tyler, Everett  
 Bruce R. Ware, C.P.A., (N. H.), Newton  
 Leo Wasserman, C.P.A., (Mass.), Roxbury  
 William H. Wheeler, Somerville  
 Carl W. Wright, C.P.A., (Mass.), Somerville

## 1915—Master of Commercial Science

William S. Cooper, B.C.S., Medford  
 Charles H. Cornell, B.C.S., C.P.A., Chelsea  
 Herbert Fallon, B.C.S., Dorchester  
 Harry J. Ferngold, B.C.S., East Boston  
 Herbert C. Fraser, B.C.S., Watertown  
 Joseph A. Kuebler, B.C.S., Winthrop  
 William J. Lyons, B.C.S., Boston  
 \*Deceased

Harvard L. Mann, B.C.S., C.P.A., East Ded-  
 ham  
 Isaac Rich, B.C.S., Roxbury  
 William D. Smith, B.C.S., C.P.A., Dorchester  
 Maurice B. Spinoza, B.C.S., Roxbury  
 \*Charles E. Stearns, B.C.S., C.P.A., Boston

## 1916—Bachelor of Commercial Science

John B. Andrews, South Framingham  
 Herbert J. Ball, S.B., Lowell  
 Ronald B. Chipchase, Melrose  
 James P. Dillon, South Braintree  
 \*Loren N. Downs, Jr., S.B., Boston  
 Howard B. Hall, Boston  
 Harry I. Kessler, Roxbury  
 Charles Lee, East Boston  
 Joseph Levine, C.P.A., (Mass.), Dorchester  
 Claude R. Marvin, Boston  
 Frederick C. Rivinius, East Weymouth

Clarence E. Rosen, C.P.A., (Mass. and N. H.),  
 Jamaica Plain  
 Joseph S. Snow, Boston  
 Harry W. Thomas, Melrose  
 Alfred T. Timayenis, Revere  
 Franklyn P. Trube, Winthrop  
 William H. Walpole, Winthrop  
 Gardner B. Wardwell, C.P.A., (Mass.), Melrose  
 Charles A. Wight, Jr., C.P.A., (Mass.), Cam-  
 bridge

## 1916—Master of Commercial Science

Robert Bruce, B.C.S., Roxbury

Herbert L. Perry, B.C.S., West Somerville

## 1917—Bachelor of Commercial Science

Max Abelman, Roxbury  
 Walter G. Ambrose, Boston  
 Paul A. Anderson, Dorchester  
 Hyman Berkowitz, Roxbury  
 Alfred L. Billings, Arlington  
 Samuel Bischoff, C.P.A., (N. H.), Dorchester  
 Elbridge A. Bollong, C.P.A., (Mass. and N.H.),  
 Allston  
 Charles I. Boynton, Boston  
 Benjamin G. Brooker, C.P.A., (N.H.), Dorches-  
 ter  
 George G. Caldwell, Mattapan  
 Richard B. Capstick, Auburndale  
 Benjamin A. Carlson, Allston  
 Henry I. F. Carney, Somerville  
 Carlton N. Chandler, Marion, Ohio  
 William F. Chaplin, Cambridge  
 Ira M. Conant, A.B., C.P.A., (Mass. and N.H.),  
 Boston  
 Michael Edelstein, Boston  
 John C. Farrington, C.P.A., (N. H.), Lowell  
 Paul Fishman, Roxbury  
 James J. Fox, C.P.A., (Mass. and N. H.),  
 Boston  
 Charles Gale, C.P.A., (Mass. and N. H.),  
 Dorchester  
 Jack M. Gordon, Malden  
 James A. Grant, Lowell  
 Clifford E. Guild, Mansfield

Fred D. Harrington, C.P.A., (Mass.), Somer-  
 ville  
 Effinger E. Hartline, Washington, D. C.  
 Simon Helman, C.P.A., (Mass.), Dorchester  
 Walter G. Hill, A.B., Jamaica Plain  
 George L. Hoffacker, Boston  
 Arthur H. Holmberg, C.P.A., (N. H.), Cam-  
 bridge  
 James T. Johnson, Jr., C.P.A., (Mass.),  
 Waltham  
 Leonard L. Kabler, Roxbury  
 Reuben Kaplan, Boston  
 Max Katz, Dorchester  
 George A. Lange, Jamaica Plain  
 \*Charles C. MacLean, Cambridge  
 Elmer A. Merriam, LL.B., West Roxbury  
 Robert Pillow, Allston  
 \*Abraham N. Radler, C.P.A., (N. H.), Dor-  
 chester  
 John A. Ryan, C.P.A., (Mass.), Lynn  
 James A. Saunders, C.P.A. (Mass.), Brighton  
 Louis I. Shulinski, Worcester  
 Nathaniel F. Silsbee, C.P.A., (N. H.), Dor-  
 chester  
 Stanton S. Skolfield, Boston  
 Samuel J. Stone, C.P.A., (Mass. and N. H.),  
 Roxbury  
 Francis B. Southwick, C.P.A., (N. H.), Waban  
 Warren E. Wescott, Melrose  
 Herbert F. Whitmore, Arlington Heights

## 1918—Bachelor of Commercial Science

Reginald Amback, C.P.A., (N. H.), Roxbury  
 Abraham Annapolsky, Winthrop  
 Walter H. Apperson, Medford  
 Ralph S. Bell, South Boston  
 \*Deceased

Louis J. Birger, Dorchester  
 Ernest H. Brooke, Dedham  
 Arthur M. Brown, Watertown  
 Arnold D. Brundage, Salem

Clarence G. Chapin, Cambridge  
 Ernest R. Ciriack, Jamaica Plain  
 Joseph B. Cohen, C.P.A., (Mass. and N. H.),  
 Worcester  
 Dennis P. Crimmins, Worcester  
 Paul E. Crocker, Dorchester  
 Percy E. Darling, Melrose  
 George A. Dempsey, Salem  
 Joseph A. Dudley, W. Somerville  
 Frank C. Fogg, Dorchester Ctr.  
 James O. Foss, Boston  
 Louis Friedman, Worcester  
 George Hansen, Dorchester  
 Maxwell Harris, Dorchester  
 \*W. Clark Haywood, Salem  
 Irving E. Heymer, C.P.A., (N.H.), Auburndale  
 Joseph Hinchey, Melrose  
 Philip Isenman, Malden  
 Percival Lantz, Dorchester  
 Albert A. Lappin, Dorchester  
 William W. Lee, Danvers  
 Edward J. McDevitt, Jr., C.P.A., (Mass.),  
 Charlestown  
 Alfred B. Mahoney, Somerville  
 Walter J. Mahoney, Worcester  
 J. H. Melzard, Jr., Hyde Park  
 Edward F. Messinger, Roxbury  
 Frederic Mitchell, Malden  
 Arthur R. Morse, Andover

Leroy C. Murch, Beverly  
 William A. Murphy, Jamaica Plain  
 Walter P. Nichols, Melrose  
 Thomas A. O'Connell, Boston  
 Henry Osberg, Malden  
 Arthur T. Partington, Winthrop  
 Oliver H. O. Pearce, Malden  
 Ralph W. Peters, C.P.A., (Mass.), Auburndale  
 Warren W. Petrie, Hyde Park  
 Henry A. Plett, South Boston  
 Leroy A. Prull, C.P.A., (N. H.) Dorchester  
 Neal D. Randall, Melrose Highlands  
 Norman B. Reed, Melrose  
 Joseph G. Riesman, Chelsea  
 Louis J. Rosenthal, Roxbury  
 George J. Saievetz, C.P.A., (N. H.), Chelsea  
 Royal Shawcross, Boston  
 William J. Shield, Medford  
 Herbert W. Simmons, C.P.A., (Mass.), Lynn  
 Frank Solomon, C.P.A., (Mass. and N. H.),  
 Roxbury  
 Harry F. Standley, Beverly  
 Nathan Stern, Boston  
 J. H. Stewart, C.P.A., (Mass.), East Boston,  
 Francis F. Vogel, Roxbury  
 George F. Wagner, Lowell  
 Raymond D. Willard, C.P.A., (Mass.), Concord  
 Frank H. Wrigley, Quincy

## 1918—Master of Commercial Science

Harry I. Kessler, B.C.S., Dorchester

## 1919—Bachelor of Commercial Science

John M. Ayer, Brighton  
 Harry D. Barr, Medway  
 Karl H. Becker, C.P.A., (N. H.), Roslindale  
 Paul G. H. Brueckner, Jamaica Plain  
 Dennis F. Casey, Dorchester  
 Ernest T. Craig, Brookline  
 Jeremiah P. Cronin, Beverly  
 Lawrence Davis, Roslindale  
 Kenneth T. Dillon, Mattapan  
 \*Arthur C. Evert, Chelsea  
 Robert A. Fopiano, Everett  
 Rudolph Gfroerer, Dorchester  
 Maurice Goldberg, Malden  
 Barry J. Goldings, Roxbury  
 Austin D. Hall, Cambridge  
 William E. Hayes, C.P.A., (Mass.), Lynn  
 Otis E. Johnson, Malden  
 George L. Kilgore, Waltham  
 Samuel A. Kline, Dorchester  
 \*Deceased

Benjamin Koslofsky, Dorchester  
 Hyman Landsman, Chelsea  
 John M. Lund, Roxbury  
 John F. McDevitt, Charlestown  
 Thomas A. Milne, Arlington  
 Edward P. Mock, Woburn  
 Daniel J. O'Brien, Boston  
 Harold F. Phillips, Dorchester  
 John F. Riordan, Roslindale  
 Mitchell Rosenfield, Revere  
 Morris Rosenthal, Roxbury  
 Nathan Rotfort, Chelsea  
 Frank P. Schaffer, Malden  
 Harold O. Smith, Lynn  
 Arthur L. Tobin, Salem  
 John W. Totten, Norwood  
 Ralph W. Watson, C.P.A., (Mass. and N. H.),  
 West Medford  
 John E. Willis, North Andover

## 1920—Bachelor of Commercial Science

### Boston

Edwin S. Anderson, Medford	John W. Higgins, Jr., Rockland
Martin J. Anderson, Gloucester	Richard F. Hingston, C.P.A., (Mass.), Lynn
Walter G. Arnold, Arlington	Laurence M. Johnson, Lynn
Frederick M. Bassett, Boston	Philip W. Johnson, C.P.A., (Mass.), Medford
Henry A. Beyer, Jamaica Plain	Hillside
John T. Bogrette, Medford	Clifford L. Jordan, Dorchester
George J. Breen, Norwood	Edward A. Kane, Malden
Curtland C. Brown, Wenham	Clarence V. Kenrick, Medford
John J. Bulger, Dorchester	Edwin H. King, Boston
Walter F. Burke, South Boston	Harris S. Knight, Salem
Harry Chalfin, Canton	Louis Kremer, Haverhill
John H. Cleary, Jr. Charlestown	Wilfred B. Maynard, Lowell
Samuel Cohen, Boston	George McEwan, Jr., Winthrop
James F. Cullen, Boston	Percy M. McIntosh, Lowell
Tracy A. Dibble, C.P.A., (N. H. and Mass.), Lynn	Nathan Milgroom, Roxbury
George N. Dill, Belmont	Frederick A. Mock, Jamaica Plain
Arthur J. Dolan, Roxbury	George E. Murphy, C.P.A., (N.H. and Mass.), Lowell
Jesse F. Dolloff, Winthrop	Herbert J. Nolan, Dorchester
John J. Donahue, Charlestown	Herman Olson, Dorchester
Robert W. F. Eagle, North Andover	Robinson S. Parlin, Watertown
Anton Eck, Dorchester	Saul O. Perlmutter, East Boston
Israel W. Ephross, Boston	B. Perlstein Morrison, Everett
Louis A. Estrach, Chelsea	Harry W. Prout, Brighton
Frank J. Farrey, North Woburn	Alonzo Putnam, Jr., Lowell
Francis P. Fleming, Waltham	Samuel Rapoport, Boston
Lawrence Eddy Foster, Beverly	William F. Richstein, Natick
Max Gidez, Boston	Israel Scolnick, Dorchester
Murdoch J. Gillis, Jr., Roslindale	Samuel M. Seif, Dorchester
John Goldberg, Roxbury	Arthur F. Smith, Lowell
George Goldstein, Malden	Sprague R. Whitney, Winthrop
Sidney Guttentag, Dorchester	Edward V. Wright, North Attleboro
Francis J. Harrigan, Dorchester	Kostas C. Yeronitis, Boston

### Worcester Division

Ernest P. Cotton, Worcester	Charles W. Parks, Worcester
Samuel Z. Cramer, Worcester	A. Oscar Price, Worcester
Harry W. LaDuke, Worcester	Lester K. Sweeny, Worcester
Bartholomew J. Murphy, C.P.A., (Mass.), Worcester	Charles R. White, Worcester

## 1921—Bachelor of Commercial Science

### Boston

Arthur H. Attlebury, Revere	Charles K. Burnham, Braintree
Spence C. Babbitt, Wollaston	Aaron Caditz, Haverhill
Ernest W. Beals, Roxbury	William Clafl, Malden
Irving R. Beiman, Malden	Eugene H. Clark, Medford
Emory J. Bolas, Easthampton	Ralph J. Cohen, Dorchester
Allen W. Bryson, Chelsea	Norman E. Dizer, East Weymouth

Max Elkon, Winthrop  
 George H. Fickeisen, Roxbury  
 Frederick H. Fletcher, Waltham  
 Daniel L. Freedman, Boston  
 Hyman H. Goldstein, Boston  
 Morris Goodman, Roxbury  
 Finley M. Gray, Lowell  
 Charles W. Grinnell, West Somerville  
 Harold A. Haigh, Methuen  
 Harry N. Hartman, Boston  
 James M. Haynes, South Boston  
 Charles S. Hobart, Chelsea  
 Alwyn G. Hole, Boston  
 Lester D. Hurd, Boston  
 Joseph Jacobs, Dorchester  
 Louis I. Jones, Dorchester  
 Louis Kaplan, Boston  
 Abraham Karp, Boston  
 Louis Lederman, Dorchester  
 Harold J. Lefkowitz, Roxbury  
 Harry E. Levine, Springfield  
 Israel A. Levin, Roxbury  
 Julius Levine, Boston  
 Harry L. Littlehale, Tyngsboro  
 Abraham H. Mamis, Providence  
 Frank W. McCafferty, Cambridge

W. Robert McLees, New York  
 Arthur Milgroom, Chelsea  
 John E. B. Munn, Roslindale  
 Bernard F. O'Neil, South Boston  
 George R. O'Neil, Lowell  
 John W. Ormsby, Wollaston  
 Carl A. Page, Lexington  
 James F. Patten, West Somerville  
 William L. Paul, Dorchester  
 Adolph G. Plett, South Boston  
 Daniel P. Pousland, Boston  
 Francis J. Quinn, Lowell  
 Louis P. Rabinovitz, Dorchester  
 Moses Rosenthal, Boston  
 Lewis F. Sawyer, Lawrence  
 Benjamin L. Schwalb, Hyde Park  
 Samuel B. Snow, Malden  
 Max Starr, Boston  
 Raymond L. Strangford, Revere  
 Percy W. Taylor, Medford  
 Frederick J. Venner, Lowell  
 Harry A. Waitt, Quincy  
 Gardner B. Wardwell, Melrose  
 Benjamin R. Warshaw, Boston  
 Myron F. Welsch, Allston  
 Raymond L. White, Somerville

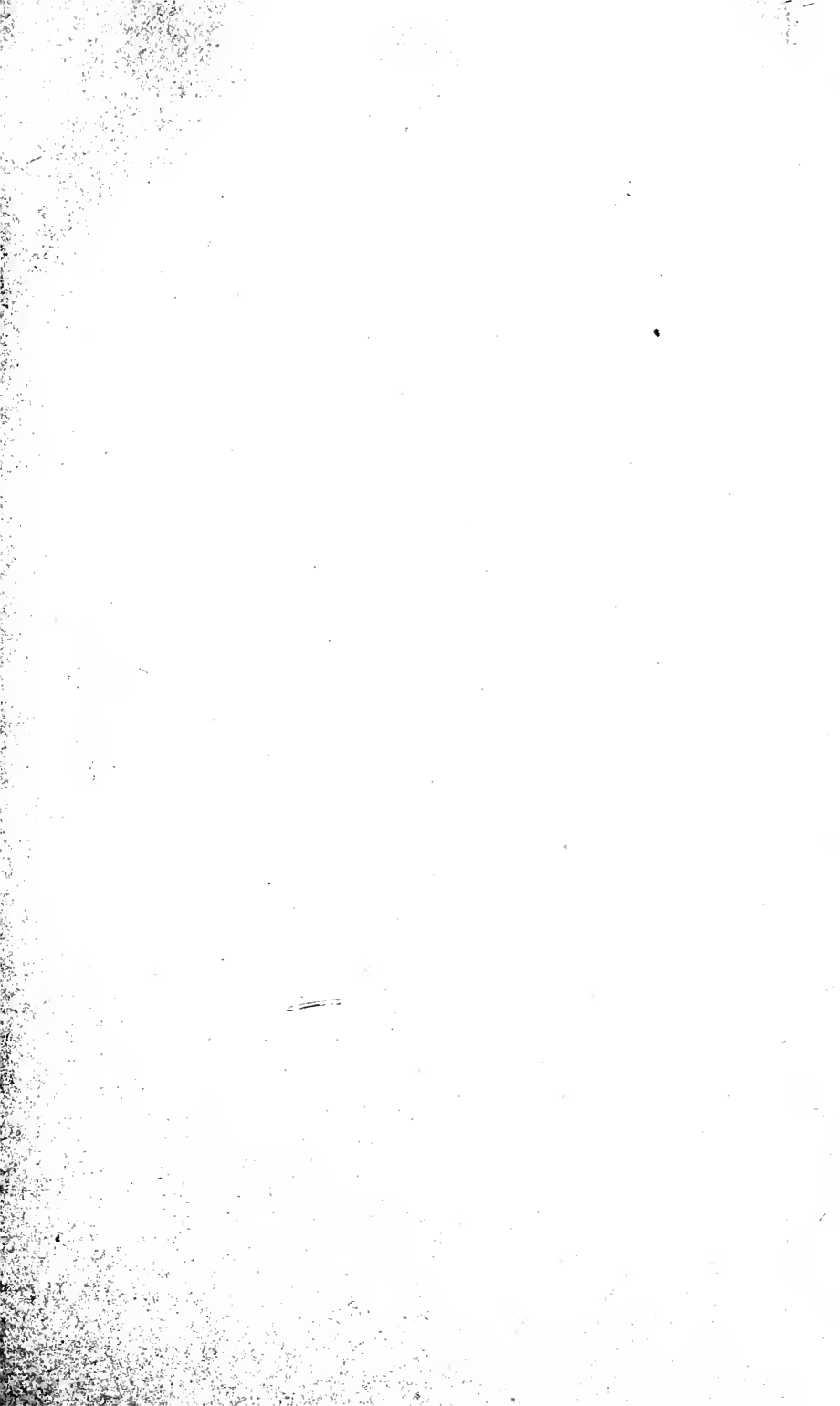
### Worcester Division

Ralph R. Bradley, Worcester  
 Joseph P. Braheney, Worcester  
 Philip H. Hensel, Worcester  
 Richard J. Hoey, Worcester  
 Walter G. Irvine, Worcester

Benjamin Jackson, Worcester  
 Alexander G. Lajoie, Worcester  
 John C. Quinn, Worcester  
 Fred E. Wilcock, Worcester

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# Northeastern University

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## Evening Polytechnic School

1922-23



EVENING SESSIONS

**Boston Young Men's Christian Association**

**316 Huntington Avenue**

**Boston 17 :: Massachusetts**



# Northeastern University

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## Catalog of the Evening Polytechnic School

1922-1923



### EVENING SESSIONS

Northeastern University of the Boston Y. M. C. A. is incorporated under the laws of Massachusetts and is located in Boston. Divisions of the University are conducted in Worcester, Springfield, Bridgeport, Providence and New Haven. Branches are conducted in Lynn, Malden and Newton



## CALENDAR 1922-23

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September 12

Registration Commences

September 18

Opening of First Term

October 12

Columbus Day (School exercises omitted)

November 30

Thanksgiving Day (School exercises omitted)

December 21

End of First Term

December 22—January 1, inclusive

Christmas Recess

January 2

Opening of Second Term

February 22

Washington's Birthday (School exercises omitted)

April 6

End of Second Term

April 7

Close of School

# NORTHEASTERN UNIVERSITY

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## THE TRUSTEES

PRESIDENT

ARTHUR STODDARD JOHNSON

1ST VICE-PRESIDENT

ALBERT HARMON CURTIS

2ND VICE-PRESIDENT

SABIN POND SANGER

3RD VICE-PRESIDENT

WILMAN EDWARD ADAMS

SECRETARY

GALEN DAVID LIGHT

TREASURER

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FRANCIS POPE LUCE

WILLIAM EVERETT MACURDA

WALTER BEMIS MOSSMAN

HENRY WHITING NEWHALL

SILAS PIERCE

ARTHUR PERRY, JR.

THOMAS HASTING RUSSELL

FRANK PALMER SPEARE

FRANCIS ROBERT CARNEGIE STEELE

## BOARD OF GOVERNORS

CHAIRMAN

ALBERT HARMON CURTIS

WILMAN EDWARD ADAMS

WILLIAM CONVERSE CHICK

WALTON LEE CROCKER

ROBERT GRAY DODGE

ERNEST LOVERING

ARTHUR STODDARD JOHNSON

WILLIAM EVERETT MACURDA

FRANK PALMER SPEARE

FRANCIS ROBERT CARNEGIE STEELE

# NORTHEASTERN UNIVERSITY

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## OFFICERS

FRANK PALMER SPEARE, LL.B., M.H.

President of the University

GALEN DAVID LIGHT, A.B.

General Assistant to the President, and Secretary of the University

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## THE EXECUTIVE COUNCIL

FRANK PALMER SPEARE, LL.B., M.H.

President of the University

GALEN DAVID LIGHT, A.B.

Secretary of the University

CARL STEPHENS ELL, A.B., M.S.

Dean of the School of Engineering and the Evening Polytechnic School

EVERETT AVERY CHURCHILL, A.B., Ed.M.

Assistant to the President and Dean of the School of Law

FRED MILLER, B.S., B.Litt.

Dean of the School of Commerce and Finance

CARL DAVID SMITH, B.H.

Regional Director

IRA ARTHUR FLINNER, A.B., A.M.

Superintendent of Secondary Schools

FRED COLFAX SMITH, A.B., B.S.

Director of Vocational Institute

# NORTHEASTERN UNIVERSITY

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## STAFF OF INSTRUCTION

CARL STEPHENS ELL, A.B., M.S.

*Dean*

THOMAS EDWARD PENARD, S.B.

*Associate Dean*

JOHN BUTLER PUGSLEY, A.B.

*Registrar*

---

HENRY BISSELL ALVORD, S.B.

*Civil Engineering*

GEORGE FRANCIS ASHLEY

*Mechanical Drawing*

CHESTER PACKARD BAKER, B.Ch.E.

*Chemical Engineering*

PERCY FRANCIS BENEDICT, S.B.

*Industrial Engineering*

JOSEPH ARTHUR COOLIDGE, S.B.

*Physics*

ALFRED JOHN FERRETTI, S.B.

*Mechanical Engineering*

GEORGE BLODGETT GEE, C.E.

*Civil Engineering*

CHESTER JAMES GINDER

*Civil Engineering*

MAURICE ELMER GOODRIDGE, S.B.

*Industrial Engineering*

EMIL ANTON GRAMSTORFF

*Structural Engineering*

JAMES WARREN INGALLS, S.B., C.E.

*Civil Engineering*



## STAFF OF INSTRUCTION

*(Concluded)*

HOWARD PERRY LEFAVOUR

*Automotive Engineering*

JOHN ROBERT LEIGHTON, B.C.E.

*Civil Engineering*

HAROLD WESLEY MELVIN, A.B.

*Director of Student Publications*

WINTHROP ELIOT NIGHTINGALE, A.B., S.B.

*Structural Engineering*

THOMAS EDWARD PENARD, S.B.

*Mathematics*

ERNEST FRED PERKINS, S.B., M.S.

*Chemical Engineering*

ROLAND GUYER PORTER, B.E.E.

*Electrical Engineering*

HENRY EDWARD RICHARDS, S.B.

*Electrical Engineering*

ELMER HANLEY RICHARDSON, B.C.E.

*Concrete Construction*

EDWARD WILLIAM GLADSTONE SMITH, A.B.

*Mechanical Engineering*

WILLIAM LINCOLN SMITH, S.B.

*Electrical Engineering*

JOSEPH SPEAR, A.B.

*Director of Student Activities*

FREDERICK ARLINGTON STEARNS, S.B.

*Mechanical Engineering*

SAMUEL ABBOTT SMITH STRAHAN

*Chemical Engineering*

GEORGE A. TRUELSON

*Architecture*

JOSEPH WILLIAM ZELLER, S.B.

*Mechanical Engineering*

## HISTORICAL SKETCH

The incorporation of Northeastern University of the Boston Young Men's Christian Association in March, 1916, marked the culmination of a notable development. The University is not a new institution, but the realization of an ideal carefully worked out and persistently followed for a period of many years. The Boston Young Men's Christian Association, established in 1851, had as one of its first lines of endeavor, evening classes for young men.

It was not, however, until 1896 that the evening school system was placed upon a permanent basis with expert supervision. As courses were being offered in increasingly large numbers, it became evident that a more complete organization should be effected, with the result that the courses were grouped as separate schools, such additional courses being offered as would complete the curricula of the several schools. The School of Law established in 1898 was incorporated in 1904 with degree granting power. The School of Commerce and Finance founded in 1907 was incorporated in 1911, and was given the right to grant the Bachelor and Master of Commercial Science Degrees in the same year. The School of Engineering was opened in 1909, and received in 1920 the right to grant the following degrees: Bachelor of Civil Engineering, Bachelor of Mechanical Engineering, Bachelor of Electrical Engineering, and Bachelor of Chemical Engineering.

Affiliated with the University are the Evening Polytechnic School, the Huntington School for Boys, and the Northeastern Preparatory School. Divisions of the University have been established at Worcester, Springfield, Bridgeport, New Haven, and Providence, offering the complete courses of one or more of the following schools: School of Law, School of Commerce and Finance, or Evening Polytechnic School.

In order to more closely co-ordinate the work of the divisions and branches throughout New England with the work at Boston, a Regional Committee was organized May 5th, 1920, for the purpose of "promoting, financing, supervising, and developing Divisions and Branches of Northeastern University." This committee is organized so as to insure the most effective and uniform service to all.

The Evening Polytechnic School was founded in 1913. Although many evening technical courses had been offered before, the regular standard curriculums in Engineering consisting of three continuous years of study had not been established. The school now offers seven curriculums in Engineering in addition to special courses. The School is well equipped to carry on the Engineering work; has a faculty consisting of experienced and able engineers and educators; and an enrollment of three hundred students.

## GENERAL INFORMATION

Many men in various lines of industry feel the need of special instruction in Engineering, either to advance in their normal occupation, or to enable them to change their positions and get into work of an Engineering nature.

To such men the School offers a wide variety of regular Engineering curriculums, and in addition, special instruction for those who desire it. The Engineering curriculums require attendance three evenings a week, during a period of three years. While only the fundamental subjects are taken up, the curriculums compare very favorably with similar curriculums offered by the good technical schools.

### Three-Year Engineering Curriculums

Regular three-year curriculums, leading to a diploma, are offered in the following branches of Engineering:

- I Civil Engineering
- II Mechanical Engineering
- III Electrical Engineering
- IV Chemistry
- V Structural Engineering
- VI Industrial Engineering
- VII Automotive Engineering

### Special Courses

Special courses are offered by the School, and will be found described in detail in the latter part of this catalog.

### Requirements for Admission

The work carried on in the regular curriculums assumes that the entering student has had previous training in Elementary Algebra to quadratics, Plane Geometry, and has a good ground-work in English. An entering student should have completed at least the equivalent of one or two years' work in a good high school. Those who have completed a full high-school course should be well fitted to carry on the courses and derive the maximum benefit from the work.

Men who have finished grammar school, but who have not had the requisite previous training in Mathematics and English, may attend the Evening Courses of the Northeastern Preparatory School, and should be able to get the necessary preparation for entrance to the Engineering School in one year.

There are no entrance examinations for entering students, but each applicant for admission is required to have an interview with the school officials.

The qualifications of each applicant will be ascertained and he will be advised as to just what work he is qualified to undertake.

Should a student prove to be unable to carry on his studies successfully, he may be required to discontinue any subject in which he is deficient, and complete such preparatory work as is deemed necessary, before being re-admitted to the subject in question.

### **Condition Examinations**

Special condition examinations in any subjects which students have taken and failed will be given by the school during the week of April 9. All students who desire to take condition examinations are requested to file a petition at the school office on or before April 1st, in order that arrangements for the examinations may be made. Each student taking a special condition examination is required to have made a payment of \$2.00 for the examination and to present his receipt as a card of admission to the examination.

### **Tuition Fees**

For each year of the regular three-year curriculums, the tuition fee is sixty dollars. The tuition fee includes membership in the Association, and is payable as follows:

One-half upon entering the school  
One-fourth November 14  
One-fourth January 15

The tuition fee for special courses will be found on page 36.

### **Refunds**

Inasmuch as the University assumes the obligation of carrying the student throughout the year, when the student registers, and the instruction and accommodations are provided on a yearly basis, the Committee on Refunds has ruled as follows:

- A. Credits or refunds may be granted only as stated below:
  1. Cash refunds may be granted only in cases where students are compelled to withdraw on account of personal illness. The application must be accompanied by a satisfactory certificate from a physician.
  2. The unused portion of the tuition paid by the applicant may be placed in suspense and used at some future time by the applicant to apply upon tuition in any school in Northeastern University, provided it is used within two years. This action is taken provided the reasons as set forth in the application meet with the approval of the Committee on Refunds.

B. Applications for refunds must be presented within sixty days after withdrawal from school.

### **Laboratory Fees**

All students taking courses in the Chemical and Electrical Laboratories are charged laboratory fees in accordance with the following rates: Inorganic Chemistry Laboratory (26), \$5.00; Analytical Chemistry Laboratory (28), \$10.00; Organic Chemistry Laboratory (30), \$10.00; Direct Currents Laboratory (22), \$5.00; Alternating Currents Laboratory (24), \$5.00. These fees are payable on entrance and do not cover breakage or destruction of apparatus. They are non-returnable.

An additional chemical laboratory deposit of ten dollars must be made when a desk is assigned to a student. At the close of the school year the cost of equipment, broken by the student or not returnable, will be deducted from this amount and the balance refunded. Students failing to check up their desks upon leaving school will be charged one dollar extra.

### **Transfers**

No student is permitted to transfer from one course to another without consulting the school officials beforehand and receiving a transfer order.

### **Rules of Standing in Scholarship**

A student's grade is officially recorded by letters and percentages, as follows:

- A, excellent, 90-100 per cent.
- B, good, 80-89 per cent.
- C, fair, 70-79 per cent.
- D, passable, 60-69 per cent.
- F, work incomplete or unsatisfactory, 40-59 per cent.
- FF, complete failure, below 40 per cent.

A mark of F in any particular subject entitles the student to make up the unsatisfactory work, or to take a condition examination. This letter is given for all grades below 60 per cent on intermediate reports.

A mark of FF denies the privilege of taking a condition examination. The whole course must be repeated in class.

### **Reports of Standing**

An informal report of the students' standing is issued at the end of the first term, and a formal report, covering the year's work, is issued at the close of each year.

## **Positions Held by Graduates**

The graduates of the School are in constant demand, and it may be said that those who complete one of the courses successfully can be sure of desirable employment in their chosen lines.

Naturally the School does not guarantee to place its graduates in positions. This is not necessary since our graduates have no difficulty in finding places for themselves.

## **Special Students**

A special student may take any subject, upon the approval of the Dean, provided he has had the necessary preliminary training.

## **Diplomas**

Upon the satisfactory completion of any of the regular curriculums, the student is entitled to receive a diploma. A fee of ten dollars is required of all candidates for a diploma. This fee must be paid on or before March 1.

# **CURRICULUMS OF STUDY**

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## **GENERAL STATEMENT**

The schedules of the various curriculums are given on the following pages. The first-year work of all curriculums is practically the same, with a few exceptions, which are made because of the need of the student for elementary training in his professional subjects.

The school year comprises twenty-eight weeks of class work and examinations. The twenty-eight weeks are divided into two terms of fourteen weeks each. The subjects in the Curriculum Outlines on the following pages have been arranged by terms. Opposite these subjects will be found the number of periods of sixty minutes each of class, recitation, laboratory or the drawing room work. The number in parenthesis, following the subject, is the number by which that subject is identified in the descriptive matter under "Subjects of Instruction."

When a student elects a curriculum, he is required to complete all subjects in that curriculum in order to receive a diploma. No subject is to be dropped, or omitted, without the consent of the Dean.

# I. CIVIL ENGINEERING

The purpose of this curriculum is to give the student an education in those subjects which form the basis of all branches of technical education, and a special training in those subjects comprised under the term "Civil Engineering." It is designed to give the student sound training, both theoretical and practical, in the sciences upon which professional practice is based.

Civil Engineering covers such a broad field that no one can become expert in its whole extent. It includes Topographical Engineering, Municipal Engineering and Railroad Engineering. It covers land surveying, the construction of sewers, waterworks, roads and streets. All these branches of Engineering rest, however, upon a relatively compact body of principles, and in these principles the students are trained by practice in the class room, drawing room and the field.

The curriculum is designed to prepare the young engineer to take up the work of assisting in the location and construction of steam and electric railways, sewerage and water supply systems, etc.

## FIRST YEAR

FIRST TERM	Periods per week	SECOND TERM	Periods per week
Mathematics (1) .....	2	Trigonometry (2) .....	2
Practical Physics (5) .....	2	Practical Physics (5) .....	2
Mechanical Drawing (6) .....	2	Mechanical Drawing (6) .....	2

## SECOND YEAR

FIRST TERM	Periods per week	SECOND TERM	Periods per week
Analytical Geometry (3) .....	2	Calculus (4) .....	2
Surveying (7) .....	2	Surveying (7) .....	2
Topographical Drawing (8) .....	2	Highway Engineering (9) .....	2

## THIRD YEAR

FIRST TERM	Periods per week	SECOND TERM	Periods per week
Applied Mechanics (12) .....	2	Strength of Materials I (13) .....	2
Railroad Engineering (10) .....	2	Railroad Engineering (10) .....	2
Railroad Engineering Drawing (11) .....	2	Railroad Engineering Drawing (11) .....	2

## II. MECHANICAL ENGINEERING

This curriculum is designed to give a foundation in those fundamental subjects which form the basis for all professional engineering practice, and especially to equip the young engineer with a knowledge of the various phases of Mechanical Engineering. The course embraces instruction by textbook, lecture, and drawing room.

The curriculum affords training in the methods, and gives practice in the process of Construction, which develops in the student the capacity for thinking along mechanical lines, thus enabling him to base all his work upon fundamental principles already learned, rather than upon empirical rules. It gives the student a good theoretical training and meanwhile devotes sufficient time to the practical work, so that he may become a proficient engineer, both in theory and in practice, in the various branches of Mechanical Engineering.

FIRST YEAR			
FIRST TERM	Periods per week	SECOND TERM	Periods per week
Mathematics (1) .....	2	Trigonometry (2) .....	2
Practical Physics (5) .....	2	Practical Physics (5) .....	2
Mechanical Drawing (6) .....	2	Mechanical Drawing (6) .....	2
SECOND YEAR			
FIRST TERM	Periods per week	SECOND TERM	Periods per week
Analytical Geometry (3) .....	2	Calculus (4) .....	2
Engineering Drawing (18) .....	2	Engineering Drawing (18) .....	2
Applied Mechanics (12) .....	2	Strength of Materials I (13) .....	2
THIRD YEAR			
FIRST TERM	Periods per week	SECOND TERM	Periods per week
Heat Engineering (20) .....	2	Heat Engineering (20) .....	2
Machine Design (19) .....	2	Machine Design (19) .....	2
Strength of Materials II (14) .....	2	Power Appliances (34) .....	2



### III. ELECTRICAL ENGINEERING

The applications of electricity have developed rapidly in recent years, and students are required to have a good working knowledge of Mathematics and Physics. It is essential that students planning to take this course should realize the fundamental necessity of obtaining a solid grounding in these subjects.

It is not the purpose of the curriculum to attempt the impossible, to turn out fully trained engineers in the various branches of the science, especially as the electrical engineering field is becoming daily more and more differentiated and specialized. The course is designed rather to lay a thorough foundation for future progress along the lines of work which may particularly appeal to the individual, and give him a good working acquaintance with the essential principles which underlie each of the more specialized branches of professional activity. Parallel with the theoretical work runs a carefully planned course of laboratory work which is intended to develop the student's powers of planning work for himself.

#### FIRST YEAR

FIRST TERM	Periods per week	SECOND TERM	Periods per week
Mathematics (1) .....	2	Trigonometry (2) .....	2
Practical Physics (5) .....	2	Practical Physics (5) .....	2
Mechanical Drawing (6).....	2	Mechanical Drawing (6).....	2

#### SECOND YEAR

FIRST TERM	Periods per week	SECOND TERM	Periods per week
Analytical Geometry (3) .....	2	Calculus (4) .....	2
Direct Currents, Lecture (21) ....	2	Direct Currents, Lecture (21) ....	2
Direct Currents, Laboratory (22) .	2	Direct Currents, Laboratory (22) .	2

#### THIRD YEAR

FIRST TERM	Periods per week	SECOND TERM	Periods per week
Alternating Currents, Lectures (23) .....	2	Alternating Currents, Lectures (23) .....	2
Alternating Currents, Laboratory (24) .....	2	Alternating Currents, Laboratory (24) .....	2
Heat Engineering (20) .....	2	Heat Engineering (20) .....	2

## IV. CHEMISTRY

The growth of chemical industries in this country during the last few years has created a new interest in the science of chemistry and an active demand in widely different fields for graduates with a thorough training. The most potent reason for this is found in the replacement of the old rule-of-thumb methods with scientific methods.

This course provides the fundamental training in Inorganic, Analytical, and Organic Chemistry, both in the classroom and laboratory, on which all industrial practice rests, and aims to prepare its graduates to take a responsible part in the establishment or development of industries which involve an application of chemical principles.

Supplementing the lectures are well-planned laboratory courses designed to strengthen and broaden the student's knowledge which he has acquired in the lectures, and to foster a spirit to attack untried problems systematically, and especially to develop power on the part of the student.

FIRST YEAR			
FIRST TERM	Periods per week	SECOND TERM	Periods per week
Mathematics (1) .....	2	Trigonometry (2) .....	2
Inorganic Chemistry, Lectures (25) .....	2	Inorganic Chemistry, Lectures (25) .....	2
Inorganic Chemistry, Laboratory (26) .....	2	Inorganic Chemistry, Laboratory (26) .....	2
* SECOND YEAR			
FIRST TERM	Periods per week	SECOND TERM	Periods per week
Analytical Chemistry, Lectures (27) .....	2	Analytical Chemistry, Lectures (27) .....	2
Analytical Chemistry, Laboratory (28) .....	4	Analytical Chemistry, Laboratory (28) .....	4
* THIRD YEAR			
FIRST TERM	Periods per week	SECOND TERM	Periods per week
Organic Chemistry, Lectures (29) .....	2	Organic Chemistry, Lectures (29) .....	2
Organic Chemistry, Laboratory (30) .....	4	Organic Chemistry, Laboratory (30) .....	4

\* The work of the second and third years is alternated each year. All second and third year students will take the third year work during the year 1922-1923 and then the second year work during 1923-1924.

## V. STRUCTURAL ENGINEERING

The purpose of this curriculum is to give the student a special training in those subjects comprised under the term "Structural Engineering." It is designed to give the student sound and thorough training in the science upon which professional practice is based.

Structural Engineering covers such a broad field that no one can become expert in its whole extent. It includes the design and construction of girders, columns, roofs, trusses, arches, bridges, buildings, walks, dams, foundations and all fixed structures and movable bridges. It includes a knowledge of the relative merits of the design and construction of buildings, bridges, and structures composed of different materials used by the engineer, such as concrete, reinforced concrete, timber, cast iron, and steel.

The curriculum is designed to prepare the young engineer to take up the work of assisting in the design and construction of structures; to undertake intelligently supervision of erection work in the field; and general contracting.

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### FIRST YEAR

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FIRST TERM	Periods per week	SECOND TERM	Periods per week
Mathematics (1) .....	2	Trigonometry (2) .....	2
Practical Physics (5) .....	2	Practical Physics (5) .....	2
Mechanical Drawing (6) .....	2	Mechanical Drawing (6) .....	2

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### SECOND YEAR

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FIRST TERM	Periods per week	SECOND TERM	Periods per week
Analytical Geometry (3) .....	2	Calculus (4) .....	2
Applied Mechanics (12) .....	2	Strength of Materials I (13) .....	2
Structural Drawing (15) .....	2	Structural Drawing (15) .....	2

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### THIRD YEAR

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FIRST TERM	Periods per week	SECOND TERM	Periods per week
Concrete Construction (41) .....	2	Concrete Construction (41) .....	2
Theory of Structures (16) .....	2	Theory of Structures (16) .....	2
Structural Design (17) .....	2	Structural Design (17) .....	2

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## VI. INDUSTRIAL ENGINEERING

New England is a great industrial section. The leaders of industry are confronted with numerous industrial Engineering problems. The financial problems involve capitalization and dividends, as the making of money is the object of operating the factory. The physical problems involve the selection of a site for the factory, the source of power, the layout and arrangement of departments, machinery, and storage spaces.

The administration of the factory means the purchase of raw materials, the employing of labor, the actual production of the goods, the office and clerical work, and the marketing of the product.

The training outlined below provides the student with definite knowledge of the interrelations of all the departments of the factory, but is particularly a preparation for the technical positions which occur in many departments of the modern manufacturing plant.

FIRST YEAR			
FIRST TERM	Periods per week	SECOND TERM	Periods per week
Mathematics (1) .....	2	Trigonometry (2) .....	2
Practical Physics (5) .....	2	Practical Physics (5) .....	2
Mechanical Drawing (6) .....	2	Mechanical Drawing (6) .....	2
SECOND YEAR			
FIRST TERM	Periods per week	SECOND TERM	Periods per week
†Industrial Organization (35) ....	2	†Industrial Organization (35) ....	2
Analytical Geometry (3) .....	2	Calculus (4) .....	2
Engineering Drawing (18) .....	2	Engineering Drawing (18) .....	2
THIRD YEAR			
FIRST TERM	Periods per week	SECOND TERM	Periods per week
†Scientific Management (36) ....	2	†Traffic Management (37) .....	2
Applied Mechanics (12) .....	2	Strength of Materials I (13) .....	2
Production Engineering (33) .....	2	Power Appliances (34) .....	2

† These subjects in the second and third years are alternated each year. All second and third year students will take the third year work during the year 1922-1923 and then the second year work during 1923-1924.

## VII. AUTOMOTIVE ENGINEERING

The extraordinary increase in the use of automobiles during the past few years has created a new profession. Automotive Engineering, which, in the opinion of automobile men, is absolutely necessary to the further development of the industry.

This three-year curriculum of study embraces the entire science of the automobile. Proper emphasis is placed on the design and construction of the automobile parts, body, symmetry, upkeep and repair, and management of production factories.

Such a complete curriculum as this is made possible through the co-operation of the Automotive School with the Evening Polytechnic School in furnishing laboratory facilities.

### FIRST YEAR

FIRST TERM	Periods per week	SECOND TERM	Periods per week
Mathematics (1) .....	2	Trigonometry (2) .....	2
Practical Physics (5) .....	2	Practical Physics (5) .....	2
Mechanical Drawing (6) .....	2	Mechanical Drawing (6) .....	2

### SECOND YEAR

FIRST TERM	Periods per week	SECOND TERM	Periods per week
†Industrial Organization .....	2	†Industrial Organization .....	2
Analytical Geometry .....	2	Calculus .....	2
*Motor Car Construction .....	2	**Motor Laboratory .....	2

### THIRD YEAR

FIRST TERM	Periods per week	SECOND TERM	Periods per week
†Scientific Management (36) .....	2	†Traffic Management (37) .....	2
Applied Mechanics (12) .....	2	Strength of Materials I (13) .....	2
Production Engineering (33) .....	2	Power Appliances (34) .....	2

\* Sixteen consecutive exercises beginning Tuesday, September 19, 1922.

\*\*Sixteen consecutive exercises beginning Tuesday, January 9, 1923.

† These subjects in the second and third years are alternated each year. All second and third year students will take the third year work during the year 1922-1923 and then the second year work during 1923-1924.

# SUBJECTS OF INSTRUCTION

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Instruction is given by lectures and recitations, and by practical exercises in the field, the laboratories, and the drawing rooms. A great value is set upon the educational effect of these exercises, and they form the foundation of each of the courses. Text-books are used in many subjects, but not in all. In many branches the instruction given differs widely from available text-books, and in most of such cases, notes on the lectures and laboratory work are furnished to the students. Besides oral examinations in connection with the ordinary exercises, written examinations are held from time to time.

In the following pages will be found a detailed statement of the scope of the subjects offered in the various courses. The subjects are classified, as far as possible, related studies being arranged in sequence.

The subjects are numbered, or numbered and lettered, for convenience of reference in consulting the various curriculum Schedules.

The requisites for preparation include not only the subjects specified by number, but also those required as a preparation for them. The reason for this is that to carry on properly the more advanced subjects, the student must have become proficient in all the elementary subjects. Some studies, specified as being required in preparation, may be taken simultaneously. The student must complete such subjects before starting on more advanced work.

By careful consideration of the curriculum Schedules, in connection with the following Description of Subjects, the applicant for a special course may select, for the earlier part of that course, such subjects as will enable him to pursue later those more advanced subjects which he may particularly desire.

The topics included in the list which follows are subject to change at any time by action of the School authorities.

## SYNOPSIS OF SUBJECTS

### Regular Courses

#### 1. Mathematics

**Preparation: Elementary Algebra and Elementary Plane Geometry**

This course is taken by all regular students during the first year, and consists of a general review of algebra up to quadratic equations, and a study of quadratic equations, ratio and proportion, variation, and the use of formulas, with special applications to problems in Physics and Engineering. It also covers a rapid review of the useful theorems of Plane Geometry with special reference to mensuration.

## **2. Trigonometry**

**Preparation: 1**

This course consists of lectures and recitations covering logarithms, radians, co-ordinates, trigonometric ratios, formulas, law of sines, law of cosines, law of tangents, solution of right and oblique triangles with applications to problems in engineering. Instruction is also given in the theory and use of the slide rule.

## **3. Analytical Geometry**

**Preparation: 2**

In this course instruction is given by lectures and recitations in the following subjects: Plotting of functions, interpolation, the straight line, the conic sections, curves represented by various equations of common occurrence in engineering, graphic solution of equations, determination of laws from the data of experiments, simplification of formulas.

## **4. Calculus**

**Preparation: 2 and 3**

This course is taken by all regular engineering students during the second term of the second year. Instruction is given by lectures and recitations in the following subjects: rate of change, differentiation, maximum and minimum, integration, definite integrals, with application to the determination of mean value, area, volume, center of gravity and moment of inertia.

## **5. Practical Physics**

**Preparation: 1**

This course consists of one lecture and one problem period each week throughout the first year. Instruction is given in the practical application of the laws of Physics. Each lecture is accompanied, as far as possible, by lecture table experiments on large-sized apparatus, built especially for this course so that the student may actually see a demonstration of the truth of the various laws, thus enabling him to grasp more readily the underlying principles. This course includes the study of the mechanics of solids, liquids, and gases, heat and its effects, and the principles of light and sound. Practical problems covering each phase of the work are given throughout the year, which are designed to fix in the student's mind the principles taken up in the lectures. The problem period gives the student a more thorough understanding of the application of the principles discussed in the lectures by the solution of practical problems.

## **6. Mechanical Drawing**

The course is planned to meet the requirements of a class composed of students who have had no previous instruction in drafting and also for those who may have had one or two years' work in preparatory schools.

Instruction is given in the proper care and use of drawing instruments, T square, and triangles, and about twenty drawings are made, including geometrical constructions, orthographic and isometric projections, development, dimensioning, and lettering, thus giving the student a thorough training in the fundamental principles of mechanical drawing so that he may easily do the drafting required in his professional course.

Few formal lectures are given since the class room work is almost entirely individual, permitting student to progress at a rate commensurate with his own ability.

## **7. Surveying**

**Preparation: 2**

This course is devoted to the study of surveying instruments, the methods of making surveys, the methods of plotting surveys as completed maps, and the solution of problems in plane surveying. Also, a study of the theory of geodetic surveying, solar and stellar observations, and the adjustments of instruments. Emphasis is laid on field note-keeping and on the construction and use of various plans with which the surveyor should be familiar.

## **8. Topographical Drawing**

**Preparation: 6**

The first half of the course is devoted to a study of the various conventional symbols used in the drawing of topographical maps. Each student is required to familiarize himself with these symbols and make an inked drawing containing several of them. Reasonable proficiency in the use and application to maps is expected. The latter part of the course is given over to the making of a contour map from field notes, then applying typical problems of earthwork, such as figuring volumes, balancing cuts and fills, grading, etc.

## **9. Highway Engineering**

**Preparation: 7**

The course is outlined to give the student the principles and practice of modern highway engineering. This is not entirely a lecture course, for much time is given to the discussion of the relative merits of numerous phases of the subject. The first part of the course considers the preliminary investigation, design, drainage, foundations, and layout, for gravel, earth and broken stone roads, including the use of bituminous materials. The latter part of the course considers several classes of pavements, including bituminous concrete, bituminous gravel, and macadam, asphalt, wood-block, stone block, concrete, and brick. Some time is devoted to studying sidewalks, curbs, bridges, culverts, and pipe systems.



## **10. Railroad Engineering**

**Preparation: 7**

This course consists of instruction in the computation and methods of laying out simple, compound, reverse, vertical and easement curves; frogs, switches, and turnouts; the computation of earthwork from cross-section notes; setting slope-stakes and general consideration of more advanced problems of Railroad Engineering. Special emphasis is laid on field-notes and field methods.

## **11. Railroad Engineering Drawing**

**Preparation: 6, 10**

The first term is devoted to the construction of a plan and a profile of a preliminary survey for a railroad. This is made from field notes of an actual survey and each student decides on his own location by the aid of a mass diagram. Comparisons are made as to the total cost of each student's location. The second term is devoted to the design and layout of a typical railroad yard as located at the end of a division. This includes the design of reversed curves, ladder tracks and the proper entrance to an engine round house. The course is supplemented by lectures.

## **12. Applied Mechanics**

**Preparation: 2, 5**

A course of lectures and recitations comprising a study of the general methods and application of statics to structures in equilibrium, including the determination of reactions, also center of gravity, moment of inertia and radius of gyration of plane areas and solids. Problems are given illustrating the various principles of design.

## **13. Strength of Materials I**

**Preparation: 12**

This course comprises the study of the strength of structural shapes in tension, compression, and bending. The subjects stated are the stresses and strains in bodies subjected to tension, compression and shearing; common theory of beams with thorough description of the distribution of stresses, shearing forces, and bending moments; longitudinal shear; slope and deflection; also the design of riveted joints and the stresses in simple frames subjected to external forces.

## **14. Strength of Materials II**

**Preparation: 13**

This is a continuation of Strength of Materials I in which a study is made of the strength of shafting and springs; combined stresses in beams subjected to tension, compression, bending and torsion; also of the strength of hooks, columns and thin hollow cylinders, and brief consideration of strains and the relation of the stresses on different planes in a body. Kinematics and dynamics are also taken up,

including the uniform and varying rectilinear motion, centrifugal force, work, power and kinetic energy.

The methods of testing and the strength of various materials used by the engineer is also taken up in this course. The methods of manufacturing, properties and uses, of materials used in mechanical engineering work, such as iron, steel, and concrete are carefully studied.

#### **15. Structural Drawing**

**Preparation: 6, 12**

The course in structural drawing consists in the working out of various graphical problems of mechanics on the drawing board, drawing standard sections of structural steel shapes, structural details and the preparation of drawings, representing simple structures. The purpose of this course is to familiarize the student with detailed drawings and teach him where and how to dimension structural parts on working drawings.

#### **16. Theory of Structures**

**Preparation: 14**

This course consists of lectures, recitations and solution of problems. Instruction is given in the fundamental theory of structures, including the theory of beams, trusses, computation of reactions, moments and shears for static and moving loads by the use of shear diagrams, moment diagrams and influence lines. The work in the classroom is supplemented by the solution of practical problems in structural design.

#### **17. Structural Design**

**Preparation: 15, 16**

The course in structural design consists of work in the drawing room. It is a continuation of the course in structural drawing given in the second year, and includes the execution of elementary structural design, taking up in a practical way the principles of the course in Theory of Structures. Each student is given data for various problems, the designs for which he works out in the drawing room, making all necessary computations and executing all drawings necessary for the preparation of complete designs of a number of engineering structures.

#### **18. Engineering Drawing**

**Preparation: 6**

This course is a continuation of Mechanical Drawing, and includes the assembly of detailed drawings and detailing of assembled drawings of machines and machine parts. The principles of Mechanism are studied. The problem work takes up the design of pulleys, bolts, belts, gearing, and gear teeth development, cams and quick return motions used in machine tool such as shapers, slotters, and planers.

## **19. Machine Design**

**Preparation: 14, 18**

This course aims to give the student practice in the application of theoretical principles previously studied and at the same time acquaint him with the many practical details which must be considered in design work. The problems taken up in the early part of the course are of a static nature, while the later problems involve dynamical stresses. The problems of the course vary from year to year, but the following are typical of the designs taken up; arbor press, hydraulic flanging, clamp, crane, air compressor, punch and shear, stone-crusher, etc.

In each design the constructive details are carefully considered with special attention to methods of manufacture, provision for wear, lubrication, etc. The work is based on rational rather than on empirical methods, the student being required to make all calculations for determining the sizes of the various parts and all necessary working drawings.

## **20. Heat Engineering**

**Preparation: 4, 5**

A course in perfect gases and steam including the solutions of general problems and the use of steam and entropy tables. The work covers air compressors, refrigeration, gas engines, steam engines, turbines, and the equipment of a power house, boilers, condensers, and auxiliaries.

## **21. Direct Currents, Lectures**

**Preparation: 5**

A course of lectures, recitations, and problem work during the second year, dealing with the fundamental laws and properties of electric and magnetic circuits. The course is devoted to the study of the principles of direct-current machinery.

## **22. Direct Currents, Laboratory**

**Preparation: 21 (taken concurrently)**

This course is not to be taken by a student who is not at the same time taking (or who has not previously taken) Course 30; unless the student desiring to take it passes satisfactorily an examination upon the entire subject matter of the preparatory course.

The experiments given herein are intended to supplement and illustrate that course as well as give the students an understanding of the principal methods of electrical testing. Each student is required to furnish a complete report, including theory, method of procedure, numerical results and conclusions drawn, for each experiment he performs.

The work in the Laboratory will not begin until after about eight of the lectures in Course 30 have been completed, or until the instructor

in that course feels satisfied that sufficient theoretical progress has been made for the student to handle the Laboratory apparatus and circuits with safety and use them intelligently.

### **23. Alternating Currents, Lectures**

**Preparation: 21**

A course of lectures, recitations and problem work during the third year, dealing with the principles of electromagnetism, electrostatics, variable currents, and harmonic currents, including both single-phase and polyphase circuits. A detailed study is made of the construction, theory and application of alternating-current machines.

### **24. Alternating Currents, Laboratory**

**Preparation: 22 and 23 (taken concurrently)**

This course is taken in connection with the corresponding class room work in alternating currents, and the experiments performed are related to that work.

Since the work is considerably more complex and difficult it is even more necessary that the student have adequate preparation, and he must either take Course 32 concurrently (or have already taken it), or pass a satisfactory examination upon the entire subject matter.

The Laboratory instruction will begin after five of the lectures in Course 32 have been covered.

### **25. Inorganic Chemistry**

A course of experimental lectures on the fundamental laws and principles of inorganic chemistry. Emphasis is placed on the study of elements, compounds, and theories, which form a basis for more advanced courses in chemistry. Problems of a physio-chemical chemical nature involving the gas laws; application of Avogadro's hypothesis; the law of definite proportion; electrolytic dissociation and the law of mass action are assigned and discussed in class. Important physical principles including a study of the mechanics of solids, liquids, and gases, heat and its effects; and elementary electricity, are also given consideration.

### **26. Inorganic Chemistry, Laboratory.**

**Preparation: 25**

By performing a number of selective experiments it is desired to develop a spirit of initiative, self-reliance, and research, on the part of the student. It is important that the student performing the experiment observe what happens; consider why it happens; and predict the action of similar substances. The laboratory course is run in conjunction with the lectures, and experiments which verify principles discussed in class are included. By the preparation of elements and compounds such as oxygen, hydrogen, the halogens, hydrochloric

acid, copper sulphate, etc., it is hoped to cultivate a scientific attitude and habit of thought on the part of the student. Neat and satisfactory notes are considered an essential part of the course.

## **27. Analytical Chemistry, Lectures**

**Preparation: 25**

This course takes up the rudiments of qualitative and quantitative analysis. In qualitative analysis not only the procedures used in the detection of the common elements are studied, but also the general principles involved, including hydrolysis, solubility product, amphoteric electrolytes, laws of solutions, and the general facts of inorganic chemistry. In quantitative analysis, half of the time is devoted to gravimetric analysis, including chloride, sulphate, and phosphate determinations. The other half of the time is devoted to volumetric analysis as illustrated by acid and alkali determinations, oxidation methods involving bichromate, permanganate, and iodine solutions, and the methods of volumetric precipitation. Special attention is given to the solution of numerical analytical problems of a practical nature.

## **28. Analytical Chemistry, Laboratory**

**Preparation: 27**

The qualitative laboratory course consists of a series of preliminary experiments illustrating principles and giving an opportunity for practice in writing equations. The analysis of unknown substances is undertaken, beginning with solutions and simple salts, and later analyzing minerals, pigments, slags, alloys, and various commercial products, such as boiler compounds, cleaning powders, glass enamels, and similar inorganic compounds. The course in quantitative analysis includes the calibration of burettes, the use of analytical balances, and a limited number of typical gravimetric and volumetric analyses in which great stress is laid on the accuracy, care, and integrity necessary for successful quantitative work.

## **29. Organic Chemistry**

**Preparation: 27, 28**

This course is devoted to lectures in the general principles and theories of organic chemistry, the methods of preparation and the characteristic reactions.

The student who is planning to fit himself for a life work in chemistry should take up organic chemistry in the spirit of respect of the magnitude and complexity of the subject. He must go through the difficulties and not over or around them. The subject is presented in a sufficiently elementary manner so as not to be beyond the grasp of the student in his first course in organic chemistry, yet comprehensive

enough in that it covers the entire field by taking up practically all of the important groups of compounds.

Emphasis is placed on the study of unsaturation, the influence of structure and substituents on the activity of the radicals.

### **30. Organic Chemistry, Laboratory**

**Preparation: 29**

This course includes two kinds of laboratory practice: (a) Organic preparations. In this the student becomes familiar with the more common methods of manipulation and the more important synthetic processes, while the application of theory to the work in hand is constantly emphasized by regular conferences with individual students.

(b) Identification of Pure Organic Compounds. This part of the work has a similar educational value to that afforded by Qualitative Analyses in the inorganic field, and the student is expected to overcome all sources of error so as to acquire confidence in his results.

### **31. Motor Car Construction**

A lecture course of sixteen consecutive lectures given in co-operation with the Automotive School. This course covers the essentials of Automobile Maintenance and repair, including ignition, starting and lighting, carburetion, cooling and oiling systems, tire work, transmissions, and differentials.

### **32. Motor Laboratory**

**Preparation: 31**

This course contains sixteen consecutive shop exercises in general repairing, overhauling, replacing of parts, and common adjusting; beginning Tuesday, January 10, 1922, and continuing beyond the regular closing period of the school in April.

### **33. Production Engineering**

A descriptive course intended to acquaint the student with the organization, methods, and equipment used in industrial plants engaged in quantity production. For purposes of discussion the plant is divided into its various units: such as general offices, drafting-room, pattern-shop, foundry, machine-shop, erecting shop, testing room, etc. The mechanical equipment, filing systems, cost-keeping systems, "follow-up" cards, etc., are described, and representative examples are shown.

### **34. Power Applications**

The course in Power Applications is devoted largely to a description of the many appliances used in modern power plants and in manufacturing establishments. A study is made of boilers, boiler accessories, electrical motors and generators and various types of gas engines. The aim of the course is to familiarize the student with the various

kinds of appliances for using power that he may be able clearly to determine the advantages or disadvantages of using certain appliances in any given case.

### **35. Industrial Organization**

A general introduction to the scientific method and spirit of modern industry. The forms of organization, whether partnership or corporation, are described. Some attention is paid to banking, exchange, and a few principles of accounting. The topics considered include office management, purchasing, selling, and advertising.

### **36. Scientific Management**

The system of drafting room, pattern shop, foundry, and machine shop is taken up in detail, although many of the principles developed apply to any line of business. An analysis of production control, time, and motion study and cost problems is included.

### **37. Traffic Management**

This covers the shipping of the product after the manufacturing is complete, including the range of usefulness of the motor truck, and the classification of the freight rates on the railroads.

### **38. Architectural Drawing I**

An elementary course, including the fundamental principles underlying all kinds of mechanical and architectural drawing; geometrical problems; orthographic and isometric projections; classical moldings; Roman alphabet and roof problems.

In connection with this course the instructor will outline a course of reading in architectural history.

### **39. Architectural Drawing II**

**Preparation: 38**

The orders of Architecture. Practical architecture and details of construction. In this course the student is taught the component parts of buildings. Typical details of construction are drawn to a large scale and in isometric projection.

### **40. Architectural Drawing III**

**Preparation: 39**

This course covers the making of complete plans, elevations and working drawings of some elementary problem.

### **41. Concrete Construction**

A course in the theory and practice of concrete construction. It includes the design of buildings, bridges, and various types of plain and re-inforced concrete structures.

An especially prepared text has been written for this course, in order to meet the demands of men who have not had the advantages of an ideal preparation. This text will be supplemented by lectures, slides, and inspection trips of actual work.

## ENGINEERING EQUIPMENT

The Schools in Boston and the Divisions are housed in buildings of the Association. In Boston the School also occupies the Gainsborough Building and the Vocational Building.

The equipment available for the use of the School includes:

36 Class Rooms	2 Libraries
5 Drawing Rooms	3 Social Rooms
3 Chemical Laboratories	3 Game Rooms
1 Electrical Engineering Laboratory	3 Gymnasiums
1 Electrical Measurements Laboratory	1 Swimming Pool
1 Mechanical Engineering Laboratory	2 Large Halls
2 Physics Laboratories	8 Offices and Equipment
Civil Engineering Equipment	

### Mechanical Laboratories

The steam power plant is completely equipped with meters, scales, indicators, Orsat apparatus for flue gas analysis, and all other equipment necessary for making complete power plant tests. The plant consists of four horizontal-return tubular boilers, two of which are equipped for burning fuel oil and two for burning coal; and four three-wire generators, of which three are driven by Ridgway reciprocating steam engines of various sizes, and the other is connected direct to a Westinghouse-Parsons turbine. This places at the disposal of our classes a perfectly equipped, up-to-date, engineering laboratory, and gives them the means of carrying on boiler tests, determining the efficiencies of various fuels and oils, taking indicator diagrams, determining the efficiency of modern reciprocating engines and turbines when connected direct to generators.

The students have the use of the equipment of our Automobile School, and they thus have an opportunity to study the most advanced ideas in gasoline engine practice.

### Field Instruments of Civil Engineering

For work in the field, the Civil Engineering Department possesses various surveying instruments, representing the principal makes and types in general use. The equipment includes two Keuffel & Esser transits, two Buff & Buff transits, two Berger levels, two other levels, and three plane table outfits. There are Locke hand levels, flag poles, leveling rods, stadia rods, engineers' and surveyors' chains, steel and cloth tapes, and all the miscellaneous equipment necessary to outfit the parties that the instruments will accommodate. The transits are equipped with neutral glasses and reflectors for astronomical observations. For higher surveying there is an aneroid barometer for barometric leveling, a sextant for hydrographic surveying, and a Gurley Electric Current meter for hydraulic measurements.



The extent of the equipment and the scope of field work itself are designed to train the student's judgment as to the relative merits of the various types of field instruments.

### **Design and Drafting Rooms**

The School possesses large, light, and well-equipped drawing rooms for the carrying on of the designing and drafting which form so important a part of engineering work. These rooms are supplied with lockers containing the drawing supplies, and files containing blue prints and photographs of machines and structures that represent the best practice.

### **Electrical Measurements Laboratory**

The laboratory was entirely rebuilt during the summer of 1920. It is equipped with apparatus fundamentally planned for teaching the principles of measurement, rather than for the precise determination of quantitative results. Nevertheless it is necessary for the proper performance of work in the other laboratory courses that a certain amount of careful quantitative work should be done, and the equipment is being steadily increased and developed with both ends held in view.

A partial list of the apparatus available for instruction is the following. Under the first head, resistance by Ohm's law, substitution and direct reflection, voltmeter methods for high resistance, insulation resistance, specific resistance, slide wire bridge, electrostatic capacity, inductance, Poggendorf's method of E. M. F. comparison. Under the second head, a Laboratory standard Wheatstone Bridge, a Kelvin low resistance bridge, a Leeds Northrup potentiometer with two standard Weston cells, volt box and steady source of high voltage for voltmeter calibration, a commutator and leads for use with the Cary-Foster method, and a chemical balance.

The instrument room is supplied with 18 high-grade G. E. and Weston ammeters and voltmeters of various sizes for D. C. work, together with numerous similar instruments of cheaper quality for lower class work.

For A. C. testing, there are 27 voltmeters and ammeters of various sizes arranged in groups of three for polyphase work, and 8 single or 3 phase wattmeters.

There is also a considerable amount of auxiliary apparatus, such as frequency indicators, synchroscopes, and power factor meters.

### **Electrical Engineering Laboratory**

The Laboratory was entirely remodeled during the summer of 1920. It is equipped with numerous machines of different types, the size and voltage ratings being selected to reduce as much as possible the risk

from large voltage and power apparatus, while at the same time making available to the student commercial apparatus such that the various quantities it is desired to measure will be of reasonable dimensions.

Moderate-sized machines are used principally for this reason but also because the students in their Engineering Practice come into contact with the large-sized and varied machinery of modern power houses and electrical plants generally.

Among the machines of this department are a pair of matched Holtzer-Cabot 5 kv-a synchronous converters, specially planned to operate as 3 phase generators, motors or double current generators. They are driven independently by 10 HP 220-volt General Electric interpole motors, and may also be mechanically coupled for certain work.

There is also a pair of matched and specially designed direct current generators of 6 kilowatt rating at 220 volts, which may be operated either shunt or compound, driven by a 15 kilowatt interpole Sprague motor with double extended shaft. These machines are particularly intended for work on characteristics and parallel operation, but may also be coupled so as to be available in the various "pumping back" methods of testing.

Alternating current is supplied by a three-phase General Electric 15 kv-a alternator, giving practically a pure sine wave, driven by a 20 kw Westinghouse motor; there is also a 7.5 kv-a General Electric alternator driven from a 15 HP Sprague motor, fitted with taps from each armature coil, a 5 kv-a Holtzer-Cabot machine with two spare rotors making it available either as a generator, synchronous motor, squirrel cage or phase wound induction motor; and a dozen or so more motors and generators of various sizes and types.

There are two sets of G. E. type H transformers, three to the set, of 3 kv-a rating with primary voltage of 550 and secondary of 220-110, which may be used for transmission experiments as well as ordinary testing, and a very considerable assortment of variable ratio transformers, reactances, condensers, and similar control and testing apparatus, aside from the very complete line of instruments belonging to the Electrical Measurements Laboratory.

## Physics Laboratories

The Physics department has been completely equipped with all necessary apparatus for the experimental work that is required of the students, as well as that required for lecture demonstration. There are two large laboratories together with a lecture room devoted to Physics. The apparatus and equipment includes verniers, levels, a vacuum pump, planimeters, spherometers, calorimeters, thermometers, a pyrometer, a sonometer, a spectroscope, a spectrometer, balances, standard gram weight, lecture table galvanometer, optical disk with all accessories, lenses, photometer, an air thermometer, a

full set of Weather Bureau apparatus, including a barograph, thermograph, hygrometer, barometer, maximum and minimum thermometers, etc. These give a wide range to the experimental work that can be done.

### **Chemical Laboratories**

The School has three laboratories completely equipped in all respects for carrying on all lines of chemical work, from that of a high school to that of most advanced college grade. There are accommodations for over one hundred and fifty students, and are suitably furnished with all the necessary appliances for chemical work. Some of these are hoods, drying closets, a still, steam and hot water baths, electrolytic circuits, vacuum and pressure apparatus, balances, combustion furnaces, and complete sets of apparatus for the sampling and analysis of flue gases and fuels. There are also testing machines for oils, viscosimeters, and different sorts of flash point apparatus. A chemical museum is connected with this department where are kept specimens for purposes of illustration.

### **Libraries**

The School shares the privileges of the steadily growing Libraries in the Main Building, to which have been added more than a \$1000 worth of engineering texts purchased for the School. In addition to this, it subscribes to current periodicals on engineering and scientific subjects for the exclusive use of students. All members of the School are entitled to take books from the Boston Public Library, and this offers a very unusual opportunity to the non-resident students.

### **Department of Physical Training**

Northeastern is one of the universities having facilities for all-round physical training. Each building in which the School is conducted is equipped with unexcelled facilities for physical training. Students are urged to avail themselves of these privileges, which can be obtained for a small fee each year. It is vitally important that men who are employed during the day and studying at night take some form of bodily and recreational exercise in order that they may do the most effective school work.

# COURSES OF STUDY

## Schedule of Engineering Subjects

(Arranged alphabetically by subjects)

<i>Subject Number</i>	<i>Subject</i>	<i>Evenings</i>	<i>Time</i>
23	Alternating Currents, Lectures .....	Mon.	7:00-9:00
24	Alternating Currents, Laboratory .....	Wed.	7:00-9:00
27	Analytical Chemistry, Lectures .....	Mon.	7:00-9:00
28	Analytical Chemistry, Laboratory .....	Wed. and Thurs.	7:00-9:00
3	Analytical Geometry .....	Mon.	7:00-9:00
12	Applied Mechanics .....	Thurs.	7:00-9:00
38	Architectural Drawing I .....	Thurs.	7:00-9:00
39	Architectural Drawing II .....	Thurs.	7:00-9:00
40	Architectural Drawing III .....	Thurs.	7:00-9:00
4*	Calculus .....	Mon.	7:00-9:00
41	Concrete Construction .....	Wed.	7:00-9:00
21	Direct Currents, Lectures .....	Thurs.	7:00-9:00
22	Direct Currents, Laboratory .....	Wed.	7:00-9:00
18	Engineering Drawing .....	Tues.	7:00-9:00
20	Heat Engineering .....	Thurs.	7:00-9:00
9*	Highway Engineering .....	Wed.	7:00-9:00
35	Industrial Organization .....	Wed. . .	7:00-9:00
25	Inorganic Chemistry, Lectures .....	Mon. and Thurs.	8:00-9:00
26	Inorganic Chemistry, Laboratory .....	Wed.	7:00-9:00
19	Machine Design .....	Tues.	7:00-9:00
6	Mechanical Drawing .....	Wed.	7:00-9:00
1	Mathematics .....	Mon. and Thurs.	7:00-8:00
31	Motor Car Construction .....	Tues.	7:00-9:00
32*	Motor Laboratory .....	Tues.	7:00-9:00
29	Organic Chemistry, Lectures .....	Mon.	7:00-9:00
30	Organic Chemistry, Laboratory .....	Wed. and Thurs.	7:00-9:00
34*	Power Appliances .....	Mon.	7:00-9:00
5	Practical Physics .....	Mon. and Thurs.	8:00-9:00
33	Production Engineering .....	Mon.	7:00-9:00
10	Railroad Engineering .....	Mon.	7:00-9:00
11	Railroad Engineering Drawing .....	Wed.	7:00-9:00
36	Scientific Management .....	Wed.	7:00-9:00
13*	Strength of Materials I .....	Thurs.	7:00-9:00
14	Strength of Materials II .....	Mon.	7:00-9:00
17	Structural Design .....	Wed.	7:00-9:00
15	Structural Drawing .....	Wed.	7:00-9:00
7	Surveying .....	Thurs.	7:00-9:00
16	Theory of Structures .....	Mon.	7:00-9:00
8	Topographical Drawing .....	Wed.	7:00-9:00
37*	Traffic Management .....	Wed.	7:00-9:00
2*	Trigonometry .....	Mon. and Thurs.	7:00-8:00

\* Second Term courses beginning January 2, 1923

# RATES OF TUITION

## Regular Three-Year Courses

Tuition fee for each year of the regular curriculums is sixty dollars, payable as follows:

One-half upon entering  
One-fourth November 14  
One-fourth January 15

The foregoing rates include membership in the Young Men's Christian Association.

### Individual Engineering Subjects

(Arranged alphabetically by subjects)

	<i>Course</i>	<i>Number of Classes</i>	<i>Tuition</i>
23	Alternating Currents, Lectures .....	28 .....	\$20.00
24	Alternating Currents, Laboratory .....	28 .....	20.00
27	Analytical Chemistry, Lectures .....	28 .....	20.00
28	Analytical Chemistry, Laboratory .....	56 .....	40.00
3	Analytical Geometry .....	14 .....	10.00
12	Applied Mechanics .....	14 .....	10.00
38	Architectural Drawing I .....	28 .....	20.00
39	Architectural Drawing II .....	28 .....	20.00
40	Architectural Drawing III .....	28 .....	20.00
4	Calculus .....	14 .....	10.00
41	Concrete Construction .....	28 .....	20.00
21	Direct Currents, Lectures .....	28 .....	20.00
22	Direct Currents, Laboratory .....	28 .....	20.00
18	Engineering Drawing .....	28 .....	20.00
20	Heat Engineering .....	28 .....	20.00
9	Highway Engineering .....	14 .....	10.00
35	Industrial Organization .....	28 .....	20.00
25	Inorganic Chemistry, Lectures .....	56 .....	20.00
26	Inorganic Chemistry, Laboratory .....	28 .....	20.00
19	Machine Design .....	28 .....	20.00
6	Mechanical Drawing .....	28 .....	20.00
1	Mathematics .....	28 .....	10.00
31	Motor Car Construction .....	16 .....	10.00
32	Motor Laboratory .....	16 .....	10.00
29	Organic Chemistry, Lectures .....	28 .....	20.00
30	Organic Chemistry, Laboratory .....	56 .....	40.00
34	Power Appliances .....	14 .....	10.00
33	Production Engineering .....	14 .....	10.00
5	Practical Physics .....	56 .....	20.00
10	Railroad Engineering .....	28 .....	20.00
11	Railroad Engineering Drawing .....	28 .....	20.00
36	Scientific Management .....	14 .....	10.00
13	Strength of Materials I .....	14 .....	10.00
14	Strength of Materials II .....	14 .....	10.00
17	Structural Design .....	28 .....	20.00
15	Structural Drawing .....	28 .....	20.00
7	Surveying .....	28 .....	20.00
16	Theory of Structures .....	28 .....	20.00
8	Topographical Drawing .....	14 .....	10.00
37	Traffic Management .....	14 .....	10.00
2	Trigonometry .....	28 .....	10.00

*The individual rates above are in addition to membership in the Y. M. C. A.*



# **NORTHEASTERN UNIVERSITY**

## **DAY SCHOOLS**

### **SCHOOL OF ENGINEERING**

Four-year courses in Civil, Mechanical, Electrical, Chemical, and Administrative Engineering, leading to the degrees of Bachelor of Civil, Mechanical, Electrical, and Chemical Engineering. Conducted in co-operation with engineering firms. Students earn while learning. Work conducted at Boston.

### **SCHOOL OF BUSINESS ADMINISTRATION**

Four-year course in Business Administration leading to the degree of Bachelor of Commercial Science. Students may specialize in Industrial Management, Marketing, Finance, and Accounting. A two-year course leading to the Certificate of Proficiency. Work conducted at Boston.

## **EVENING SCHOOLS**

### **SCHOOL OF LAW**

(Co-Educational)

Four-year course leading to the degree of Bachelor of Laws. Preparation for Bar Examination and practice. High scholastic standards. A limited number of mature special students admitted each year. Work conducted at Boston, and in Divisions at Worcester, Springfield, and Providence.

### **SCHOOL OF COMMERCE AND FINANCE**

(Co-Educational)

Four-year courses in Professional Accounting and Business Administration leading to the degrees of Bachelor and Master of Commercial Science. Special two-year courses for those desiring intensive specialization. Work conducted at Boston, and in the Divisions and Branches at Worcester, Springfield, Providence, Bridgeport, New Haven, Lynn, Malden, and Newton.

### **EVENING POLYTECHNIC SCHOOL**

Three-year courses in Civil, Mechanical, Electrical, Chemical, Structural, Industrial, and Automotive Engineering leading to a diploma. Work conducted at Boston. Trains men for positions of trust and responsibility.

### **NORTHEASTERN PREPARATORY SCHOOL**

Courses in usual high school subjects leading to a diploma. Three sixteen-week terms each year. It is possible for students to meet college-entrance requirements in from three to five years. Work conducted at Boston and in Divisions at Worcester and New Haven.

### **VOCATIONAL INSTITUTE**

A diversified program of short intensive courses including all phases of Automotive industry with special instruction for owners, salesmen, mechanics, and chauffeurs.

### **DEPARTMENT OF UNIVERSITY EXTENSION**

Home Study courses in co-operation with the United Y. M. C. A. Schools. Classes organized and lectures conducted in cities and towns throughout New England, and in co-operation with leading corporations and business concerns.

For further information concerning any of the above schools

Address

**NORTHEASTERN UNIVERSITY**

316 Huntington Avenue, Boston, Massachusetts  
or nearest division or branch.









THE  
HUNTINGTON  
SCHOOL  
*for*  
BOYS

320 HUNTINGTON AVENUE

# Calendar

1921-22

1922-23

May 1—Sept. 1	Period of Registration	May 1—Sept. 1
Sept. 13, 14	Entrance Examinations	Sept. 12, 13
Sept. 27	School Year Begins	Sept. 26
Nov. 24	Thanksgiving Day	Nov. 23
Dec. 16	Close of Fall Term	Dec. 15
Jan. 2	Winter Term Begins	Jan. 2
Feb. 22	Washington's Birthday	Feb. 22
March 24	Winter Term Closes	March 23
March 17	Father and Son Banquet	March 16
April 3	Spring Term Begins	April 2
April 19	Patriot's Day	April 19
May 30	Memorial Day	May 30
May 31—June 1	Entrance Examinations	June 1-2
June 9	Commencement	June 8

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GALEN D. LIGHT, Secretary

ARTHUR STODDARD JOHNSON

WILMAN E. ADAMS

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FRANK W. WRIGHT

Deputy Commissioner of Education  
of Massachusetts

ALEXANDER INGLIS

Professor of Education, Harvard

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(Harvard University)  
*Headmaster*

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(Harvard University)  
*Assistant Headmaster*

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*Director of Summer School*

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(Tufts College)  
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(Harvard University)  
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(University of Kansas)  
*English*

CHARLES F. SEAVERNS  
*Mathematics and Mechanical Drawing*

PERCY E. JONES  
*Woodworking and Mechanical Drawing*

D. EDWIN WILDER, LL.B.  
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*Mathematics*

HORACE E. JACOBS, A.M.  
(Brown University)  
*History*

JOHN L. SALMON, A.B.  
(Central University)  
*Modern Languages*

T. CARLTON UPHAM, A.M.  
(University of Illinois)  
*Supervisor of Study*

THOMAS M. PHIPPS, A.B.  
(Grove City College)  
*Supervisor of Study*

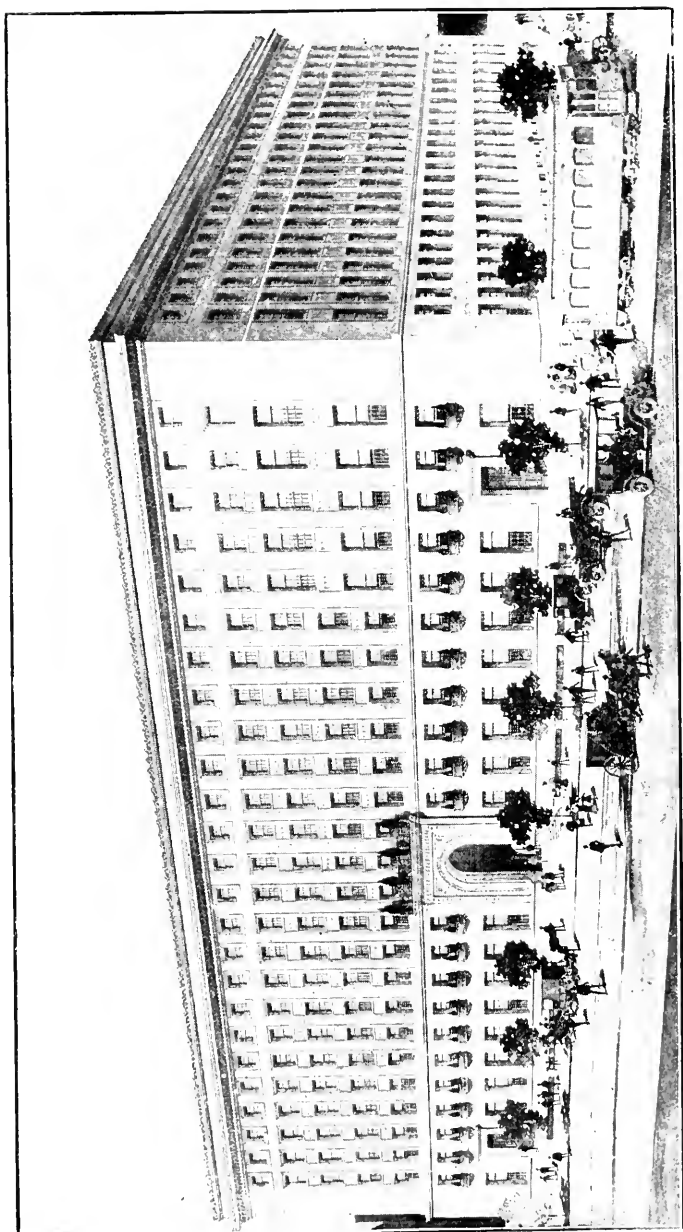
ELIZA R. BAILEY  
*Junior School*

JOSEPH A. AUDET, D.M.D.  
(Tufts)  
*Director of Musical Clubs*

EMILY V. S. RAMSAY  
*Recorder*

MAUDE L. McLEOD  
*Secretary to Headmaster*

ALTA A. BOYD  
*Bookkeeper*



THE MAIN BUILDING



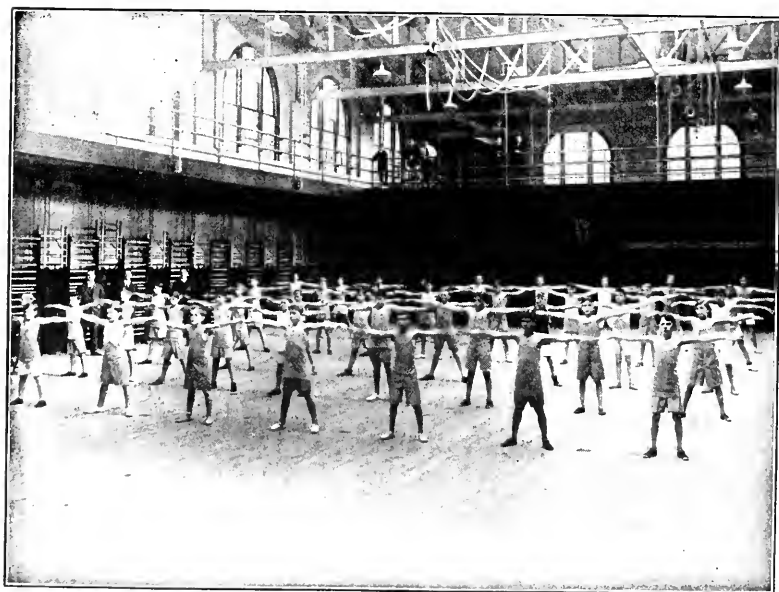
## A STATEMENT

THE Huntington School for Boys is located at 320 Huntington Avenue. It uses the buildings and equipment of the Boston Young Men's Christian Association. These buildings were erected in 1913 at a cost of over one and a half million dollars. The part of the plant devoted to educational work includes practically half of the entire floor space of all the buildings. The white line shown in the half-tone of the main building on the opposite page outlines the floors where the class rooms and laboratories are located. Besides the section indicated in the cut, the school uses part of a large building in the rear of the main building, the assembly hall, the gymnasium, the swimming pool, and the libraries.

There were two main reasons for establishing Huntington School: (1) The school was founded to use to the fullest extent the expensive laboratories, drawing rooms, libraries, and numerous class rooms provided in the new buildings for the extensive educational work conducted during the evening hours. A well-known private school conducted its work in the former Association building, but it was deemed inadvisable to rent the new and enlarged educational plant to a corporation not under the control of the Association. (2) There was a demand in Boston, and is now, for a well-equipped private secondary school that prepares boys for higher institutions and gives training in the development of Christian character. The fact that the maximum enrollment was reached early in the school's history indicates that the school is meeting a need.



ONE OF THE CREWS



LOWER SCHOOL GYMNASIUM CLASS

## HISTORY

THE Huntington School was established in September, 1909, in response to a demand for a private school that would prepare adequately for higher institutions of learning and give due prominence to character building. It was successful from the first in attracting boys of purpose who wished to prepare for the colleges and technical schools of the East. The School reached its maximum enrollment in the Fall of 1914, and, notwithstanding the World War and the consequent drafting of the older boys, it has maintained its full enrollment of three hundred boys each year. Such a growth indicates that the school has the confidence of the public and that its administration, organization, aims and purposes are in accordance with sound educational principles.

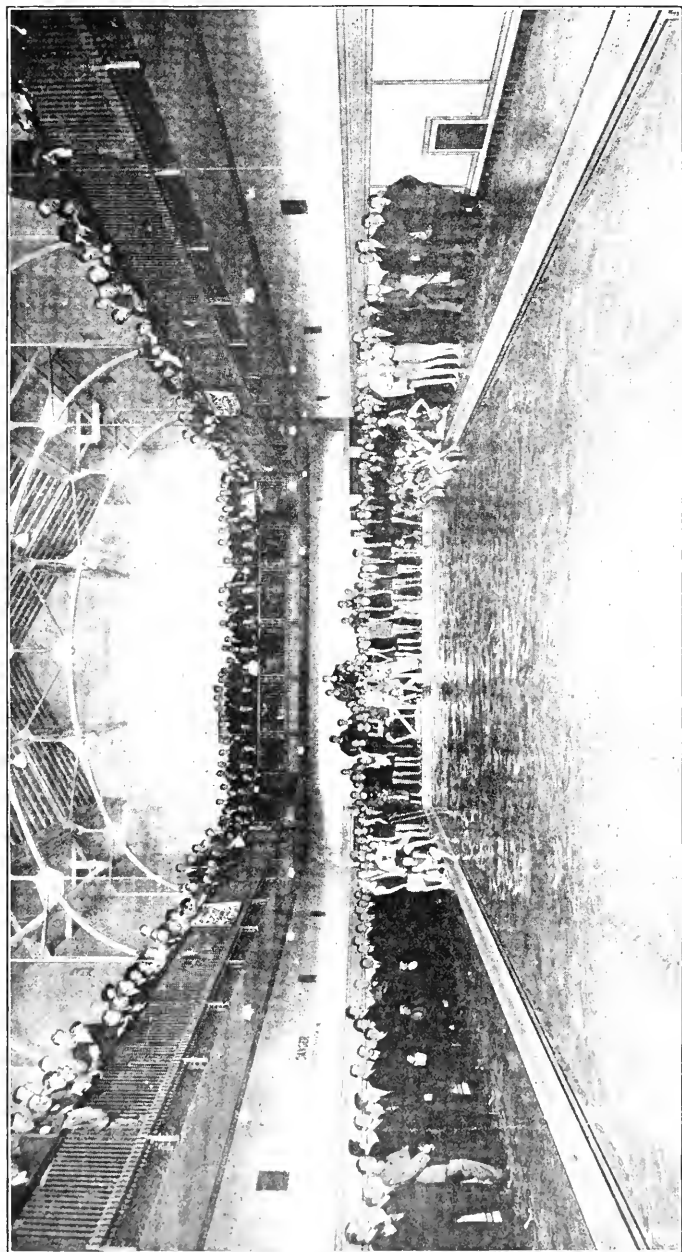
## THE AIM AND FUNCTION

THE aim of the school since it was founded has been to give to its boys a training that will enable them to become the leaders in the many fields of opportunity open to them. To this end emphasis is laid on the necessity for thoroughness and accuracy, on the strict attention to the tasks of the school and to the duties of school life, on the value of a sound and well-developed body and a strong character and independence of thought, through daily association in their studies, athletic sports, and general life, with well-rounded Christian men.

The school prepares for all colleges and scientific schools. It provides also advanced training along technical and business lines for those who do not expect to enter college.

## BUILDINGS AND EQUIPMENT

THE school is housed in the finest buildings of their kind in America. They are located on Huntington Avenue in the section of Boston noted for its institutions of learning. The schools and colleges within sight of the school are attended annually by fifteen thousand students. The location is easily accessible from all parts of the city and suburbs, and is free from the outside influences which distract the attention of students.



WATER CARNIVAL

The impression one gets from looking at the buildings from the front is that of a large structure 240 x 200 x 90 feet. As a matter of fact, there are six buildings, each on its own foundation, and with the exception of the front and west side, the buildings are comparatively low, connected by corridors and bridges. This arrangement gives exceptionally fine light and air to all of them.

The six buildings are as follows: Administration, Assembly Hall, Recitation, Natatorium, Gymnasium, and Vocational.

#### **Administration Building**

In the Administration building, besides various offices, there are libraries, faculty room, class rooms, reading and social rooms.

#### **Jacob P. Bates Hall**

The Jacob P. Bates Hall has a seating capacity of five hundred. A large stage suitable for entertainments of all kinds is available.

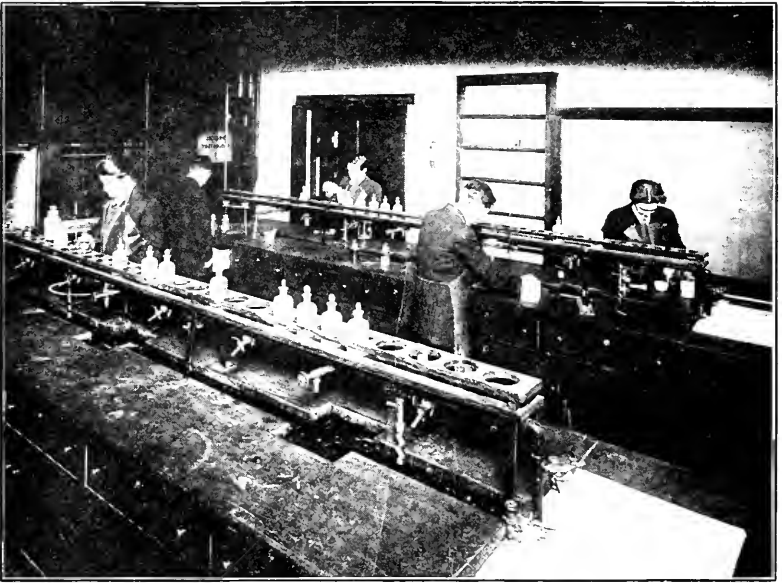
The hall is equipped with a motion picture machine. The regular assembly exercises and the lectures of the school are held here.

#### **Recitation Building**

The Recitation building is 196 feet long and 58 feet wide and six stories high. In the basement are the heating and ventilating plant. The first floor is taken up with game, social, and club rooms and a small assembly hall seating one hundred and fifty. On the second and third floors are located twenty class rooms, each with a seating capacity of from twenty to thirty. The fourth floor contains a science lecture room completely equipped, a physics laboratory, three chemical laboratories, three drafting rooms, two recitation rooms and department offices. The fifth and sixth floors are used for dormitories.

#### **Natatorium**

This building is located between the Assembly Hall and the gymnasium, and is easily accessible from the locker rooms of the latter. The swimming pool is 75 feet long by 25 feet wide, and is under a glass roof admitting floods of sunshine. The pool is supplied with filtered salt water from our own artesian well, and is heated to the proper temperature by an elaborate system of pipes. Altogether the Natatorium is one of the finest of its kind.



CHEMISTRY LABORATORY  
(One of Three)



LUNCH ROOM

**Gymnasium** This structure is known as the Samuel Johnson Memorial Gymnasium, the funds of which were provided by the relatives of the late Samuel Johnson. On the main floor is the gymnasium proper, which is well equipped with the best apparatus. The running track which encircles the main floor is twelve laps to the mile. The visitors' gallery will seat five hundred. The first floor is taken up almost entirely with individual lockers, shower baths, and special exercising rooms. The gymnasium is so arranged that, by a system of sliding partitions, it can be divided into one, two, or three separate compartments, making it possible to conduct a number of activities at the same time.

**Vocational Building** The Vocational Building is located directly back of the main group. This is a substantial structure 150 x 58 feet and three stories high: here are located the wood-working plant, the electrical laboratories, machine shop and class rooms.

## EQUIPMENT

**Class Rooms** The class rooms are of standard size; they are equipped with tablet arm chairs or with school desks.

**Laboratories** The school is especially fortunate in having laboratories that are better fitted to carry on the work in sciences than those provided by many colleges. There are three chemical laboratories, one large physics laboratory, and a specially-fitted lecture room equipped with apparatus used for purposes of demonstration.

**Library** The school has excellent facilities for study in the libraries and reading rooms.

**Drawing Rooms** The school uses two special drawing rooms, one for free-hand work and one for mechanical drawing. These are properly equipped and well lighted with both natural and artificial light.

**Shops** A liberal amount of equipment has been provided for courses in woodworking.

# General Information

## ADMISSION

**P**ARENTS or guardians who wish to enter their boys in the school should apply to the Headmaster for blank forms on which to make application.

The school requires from all applicants testimonials of good moral character.

It is expected that no boy will apply for admission whose conduct in his previous schools has been such as to bring discredit to himself.

Parents and guardians are advised that registration before June 1 will result in advantage to the student. When registration takes place early there is opportunity to advise concerning the program of studies and give greater attention to individual needs.

A registration fee of five dollars must accompany the application. This fee is part of the regular tuition.

## ENTRANCE EXAMINATIONS

**E**NTRANCE examinations for admission to the Main School will be held at the School on the first Wednesday and Thursday in June, on the second Tuesday and Wednesday in September, and at other times by appointment. These examinations are divided into three divisions: (1) Psychological tests, (2) Written examinations, and (3) Oral examinations. The purpose of these tests is not so much to determine whether the boy should be admitted, but rather to aid in placing him in the form in which he is fitted to do his best work. They will be supplemented by former records and letters from previous teachers.



## CLASSIFICATION

**G**RADUATES of approved public grammar schools who rank in the upper half of the class will be admitted to the Third Form without examination. All others will be classified on the basis of information received from school records, mental tests, and examinations.

In the main school a boy is classified according to the credits that he has earned, irrespective of his advancement in any subject. For admission to the Second Form a boy must have earned 15 credits; for admission to the Third Form, 35 credits; for admission to the Fourth Form, 55 credits; for admission to the Fifth Form, 80 credits; for admission to the Sixth Form, 100 credits. (A course taken four or five times per week for the school year counts five credits.)

Only those students who have passed eight units on the College Board Examinations or have received certificating grades in eight units from this or any accredited school, and who can complete the requirements for the diploma in one school year, will be admitted to the senior class.

## REQUIREMENTS FOR GRADUATION

**T**O obtain the school diploma, a boy must earn 120 credits in the six Forms, and, if he is preparing for college, he must satisfy all requirements for admission to the particular college that he is planning to enter.

The requirements for graduation are as follows:

English throughout the six Forms.

Mathematics—Algebra and Plane Geometry.

Language—either a modern or an ancient language to total ten credits.

History—Five credits.

Science—Five credits.

Electives sufficient to total 120 credits.

*Note.*—Five credits make one unit.

## **COURSE OF STUDY**

The school provides a continuous and systematic course of instruction which prepares boys for admission to the freshman class in university and college. It admits boys whose ages rank from eight years to the age of college entrance. The program of work is given in nine classes or Forms: three in the Junior school, corresponding to grades four, five, and six of the public schools; and six in the Main School.

## **REPORTS**

Reports of the boys' work are sent home weekly, after the first two weeks of the school year, and at the end of each of the three terms. Work missed for any reason is marked zero until made up, when the grade obtained in making up the work is substituted.

## **DETENTIONS**

The school reserves the right to retain students after the regular hours to make up back work. Attendance on Saturday morning may be required of students who are behind in their work or for disciplinary reasons.

## **SUPERVISED STUDY**

The school has inaugurated a plan of supervised study that reduces the home work to a minimum. The class hours are sixty minutes in length, thus providing thirty minutes for recitation, ten minutes to consider the new assignment, and twenty minutes to devote to the advanced work. By such a plan it is possible for students to have a clear conception of the new work, to receive definite instructions on difficult points, and to learn the best methods of study.

## **HOME STUDY**

The requirements for colleges are so exacting that it is necessary for every older boy to do some home study. The boarding schools who have the boy the entire time find it necessary to have evening study hours. The amount of time

needed for such home study will, of course, depend upon the student, the amount of work he is carrying, and also upon the daily assignments. Boys in the last three years of the Main School will need at least two hours daily. •

## **CO-OPERATION**

The school and the home must co-operate. Parents may aid greatly by their attitude toward school work and toward discipline. The work of the school cannot be satisfactorily done unless the boy has every school evening to prepare his work. Parents are urged to permit no evening engagements except on Friday and Saturday, and to insist on early hours for retiring.

## **SCHOLARSHIP HONORS**

Two grades of honors for scholarship are conferred each term: "Highest Honors" upon all boys who have maintained a rank of *A* in all courses requiring home study; "Honors" upon all boys who have not received a rank lower than *B* in all courses.

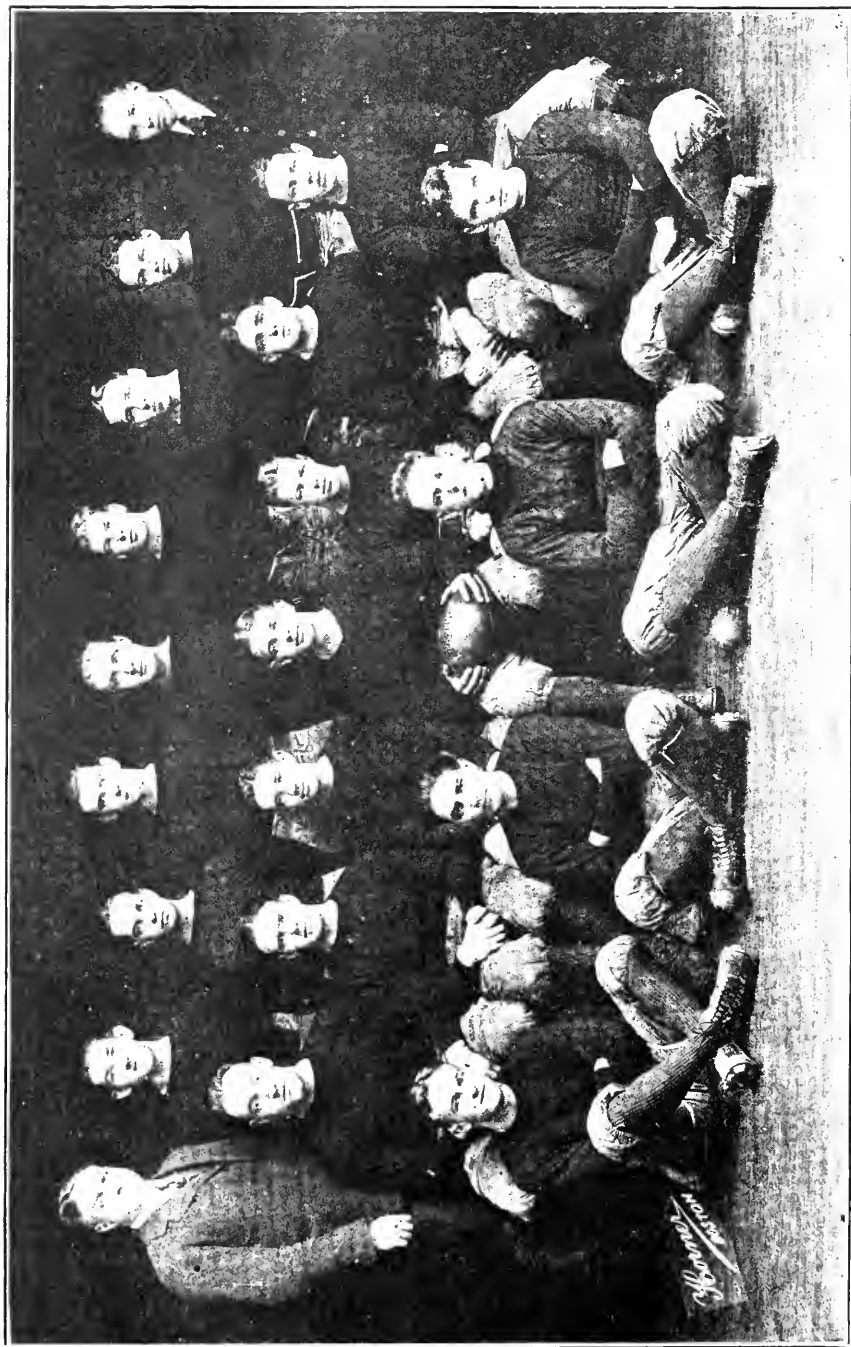
## **EXAMINATIONS**

Examinations are held at the close of each term. Boys who fail in examinations must make up the deficiency within a reasonable time or enter a lower form in the subjects failed.

The following is the marking system used by the school:

A	90% to 100%
B	80 to 90
C	70 to 80
D	60 to 70
F	Below 60%, failure

The passing grade is sixty, but only half credit is given for work passed with grades between sixty and seventy. Students who are pursuing courses which follow in consecutive order are obliged to repeat such courses if a grade of *D* is received, or otherwise make up the deficiency.



FOOTBALL TEAM

## **CERTIFICATES**

The school is on the list of accredited schools whose certificates are accepted by the colleges of the United States that admit by that method. Certificates are issued only to such students as maintain a record throughout a year's course of eighty per cent or better.

## **ENROLLMENT**

The enrollment of the school is limited to three hundred boys.

## **ORGANIZATION**

Although the school enrolls three hundred boys, it is so organized that the advantages of the small school are retained. The number of students assigned to a class averages fifteen. The teaching staff is sufficiently large so that each teacher has the responsibility of only fifteen boys.

## **HOURS OF ATTENDANCE**

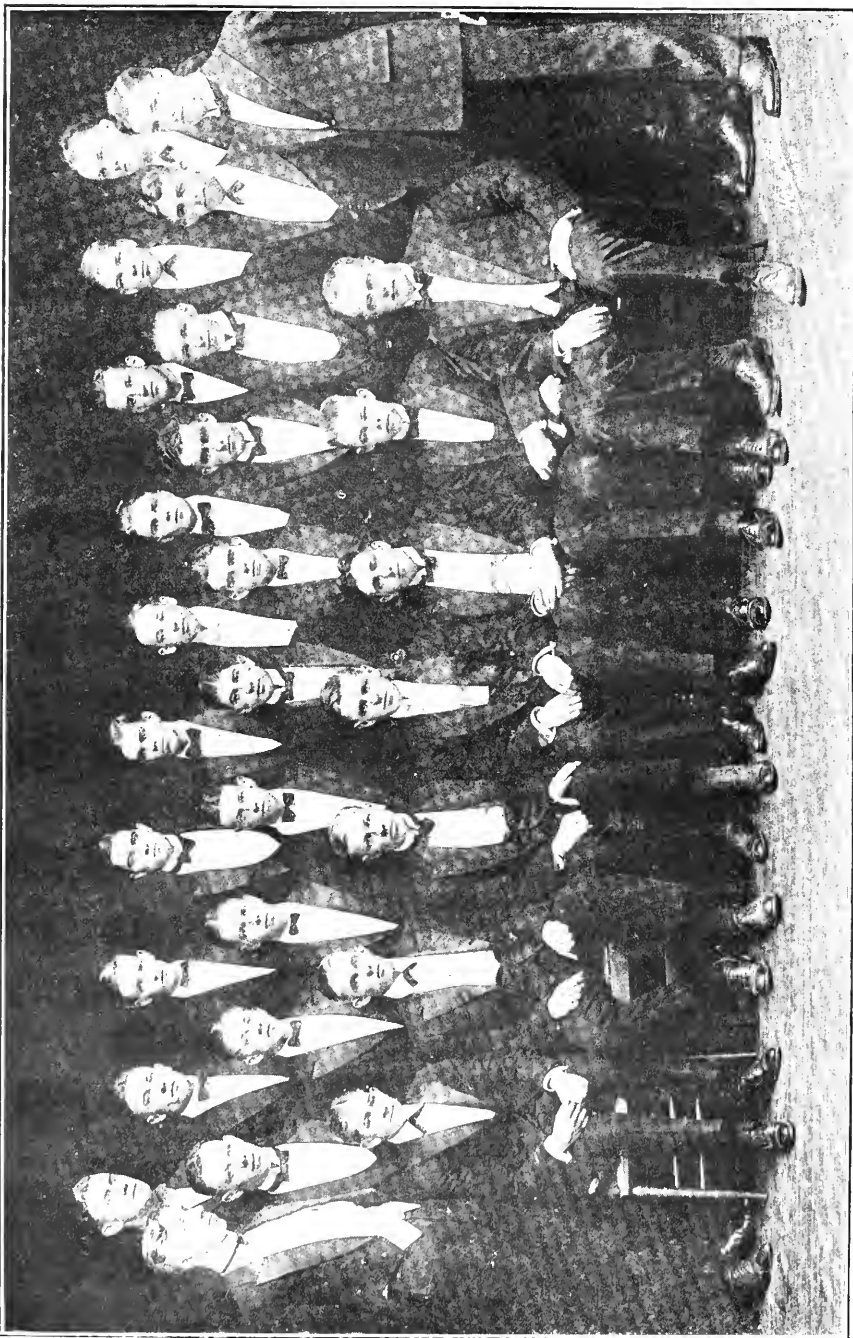
The school is in session five days each week.

The daily hours of attendance for the Junior School are from nine to two, three, or four, as arranged by the parent. Pupils who remain until four have an hour and fifteen minutes for recreation in the middle of the afternoon.

The session for the Main School begins at 9:00 and closes at 3:00. The athletic program is conducted after 3:00.

## **MAROONS AND BLACKS**

To stimulate athletic interest within the school, each boy is enrolled under one of the school color groups, the Maroons and the Blacks. This makes it possible for every one to participate in the competition for intra-school athletic honors, as the contests in the various sports are between the Maroons and the Blacks of the same grade or Form, and the points won by the juniors count equally with those of the older boys.



GLEE CLUB

## STUDENT ACTIVITIES

The extra-curriculum activities of the boys include the publication of a weekly paper, *The Huntington Record*, and a year book, *The Periscope*; two Mandolin Clubs, one for beginners and one for experienced players; an Orchestra; two Debating Clubs; a Dramatic Club; an Athletic Association, and a Glee Club. The musical organizations and the Dramatic Club unite in giving an annual concert.

## RELIGIOUS TRAINING

The school is non-sectarian, but thoroughly Christian. Brief religious exercises are held at the assembly meetings. These are frequently addressed by leading ministers of Greater Boston. Students are encouraged to organize Bible study groups and opportunity is provided within the school day for these voluntary meetings.

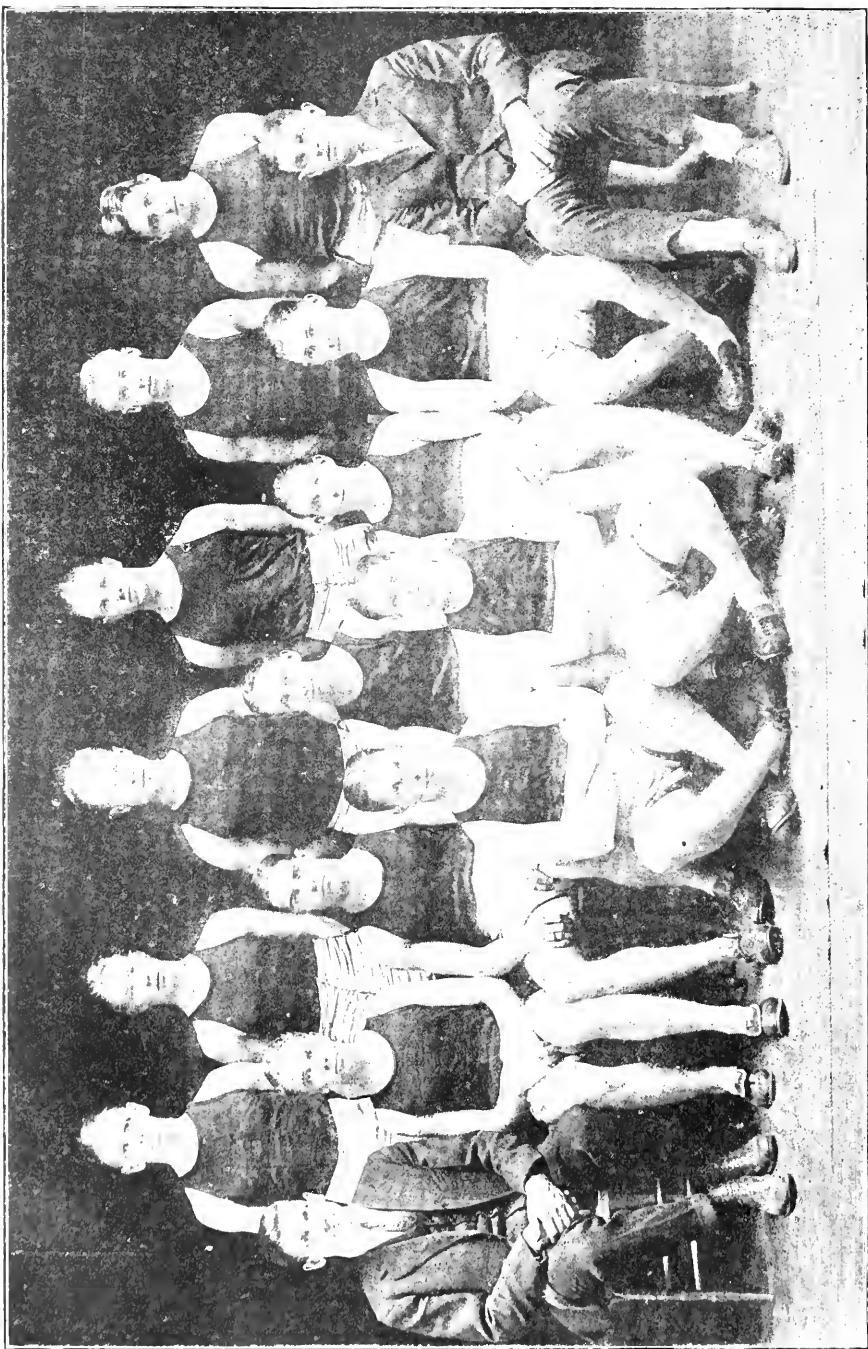
## ROOMS

Students from a distance may, by early application, secure rooms in the building. A list of approved rooms in the vicinity of the school is also on file. The charge for such rooms ranges from \$3 to \$5 per week.

## LECTURES

SINCE the school began it has made a practice of bringing before the student body many speakers of prominence to present various topics of current interest. Vocational talks by men prominent in their work have aided our students in selecting their life's work. Through these addresses the students have been kept in close touch with the outside world and have had their ambitions stirred to make the most of their time in school so that they would be prepared to take their places in the world's work.

A moving picture machine has made it possible to present to our student body interesting and instructive educational films. The lectures and pictures have become valuable supplementary material for the various courses pursued by the students.



TRACK TEAM



## PHYSICAL TRAINING

### **Physical Examination**

Before students are assigned to physical work, they are given physical examinations. The examiner advises as to the kind of exercise best suited to the needs of each. All students physically able are required to take this physical work, which has for its aim the symmetrical development of the body.

In addition to this work students participate in games and sports. Many different sports are offered each season. During the fall term, football, cross country, track, tennis, outdoor basketball, association football, and field hockey; during the winter term, track, indoor and outdoor basketball, swimming and hockey; during the spring term, baseball, track, tennis, soccer, cross country and rowing. Each sport is directed by teacher coaches, men who were prominent in athletics at college, and have had experience in directing athletics.

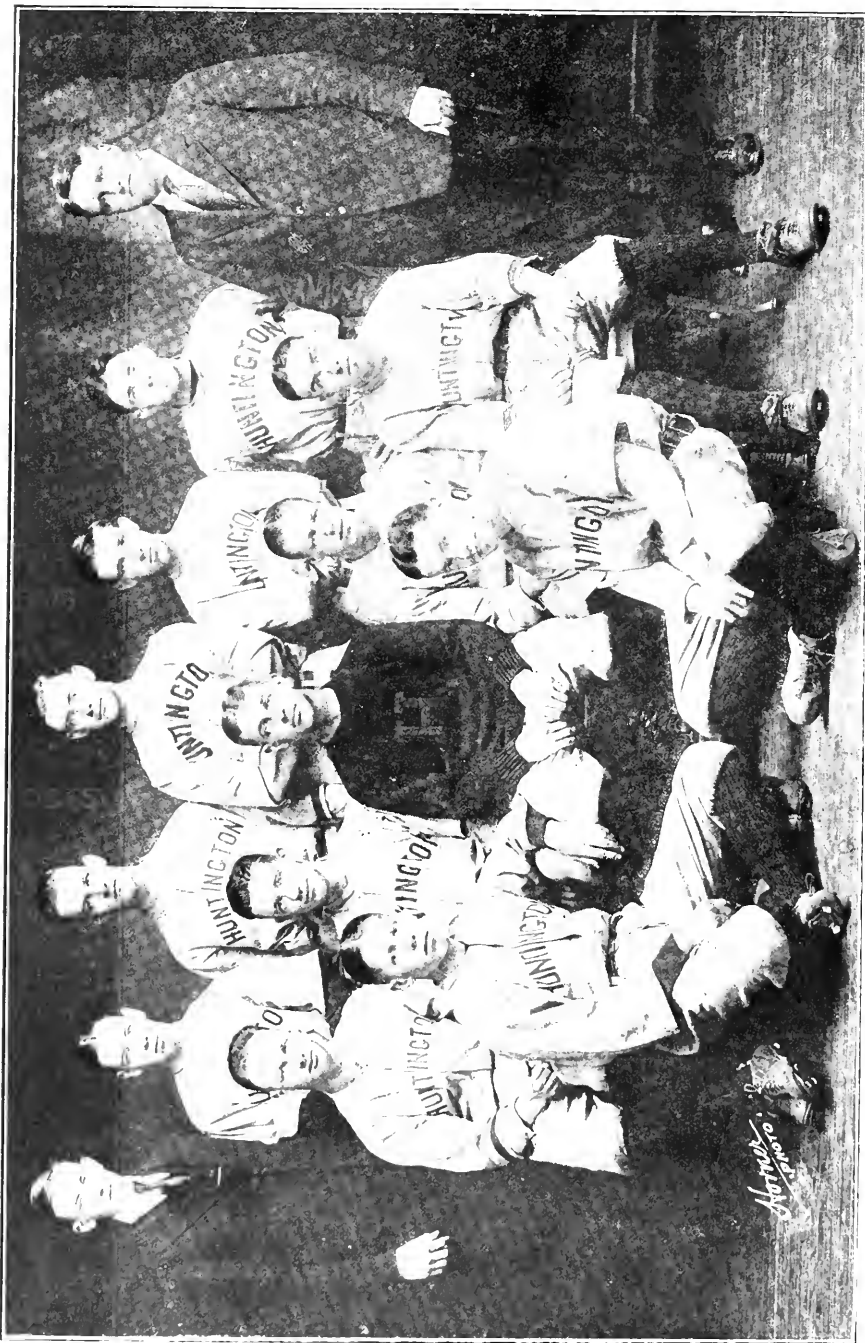
The School maintains that the greatest good is secured through a system of physical training that gives each boy regular exercise under the leadership of men whose standards of living are right.

### **Gymnasium Uniforms**

It has been found advisable to have a uniform suit for these gymnasium classes. Therefore new pupils are requested not to get gymnasium suits before entering. Orders will be taken in the Physical Department immediately upon the opening of the School in the fall.

### **Facilities**

Few schools have such facilities for physical training as are found at Huntington. The gymnasium with its running track, three basketball courts, wrestling room, special exercising room, handball courts, and bowling alleys, is one of the most complete in New England. The swimming pool under a glass roof, filled with filtered salt water, heated to the proper temperature, compares favorably with the best.



BASEBALL TEAM

The outdoor facilities are exeptional for a city school, making it possible to introduce many features common only to country schools. Adjoining the building is a large field equipped for athletics. Here are four tennis courts, outdoor gymnasium, handball court, basketball courts, jumping pits, board track, cinder track with a hundred-yard straightaway, and baseball and football fields. We are near enough to the Charles River to maintain a crew.

## REGULATIONS

THE co-operation of all parents in the enforcement of regulations is requested. Each boy is expected to be punctual in his attendance upon every school exereise. Dismissing students before the close of the school day interferes seriously with the school routine and with the students' advancement. Only in case of unusual urgeney should such requests be made. Dentist appointments should be made at a time when they do not interfere with the school work.

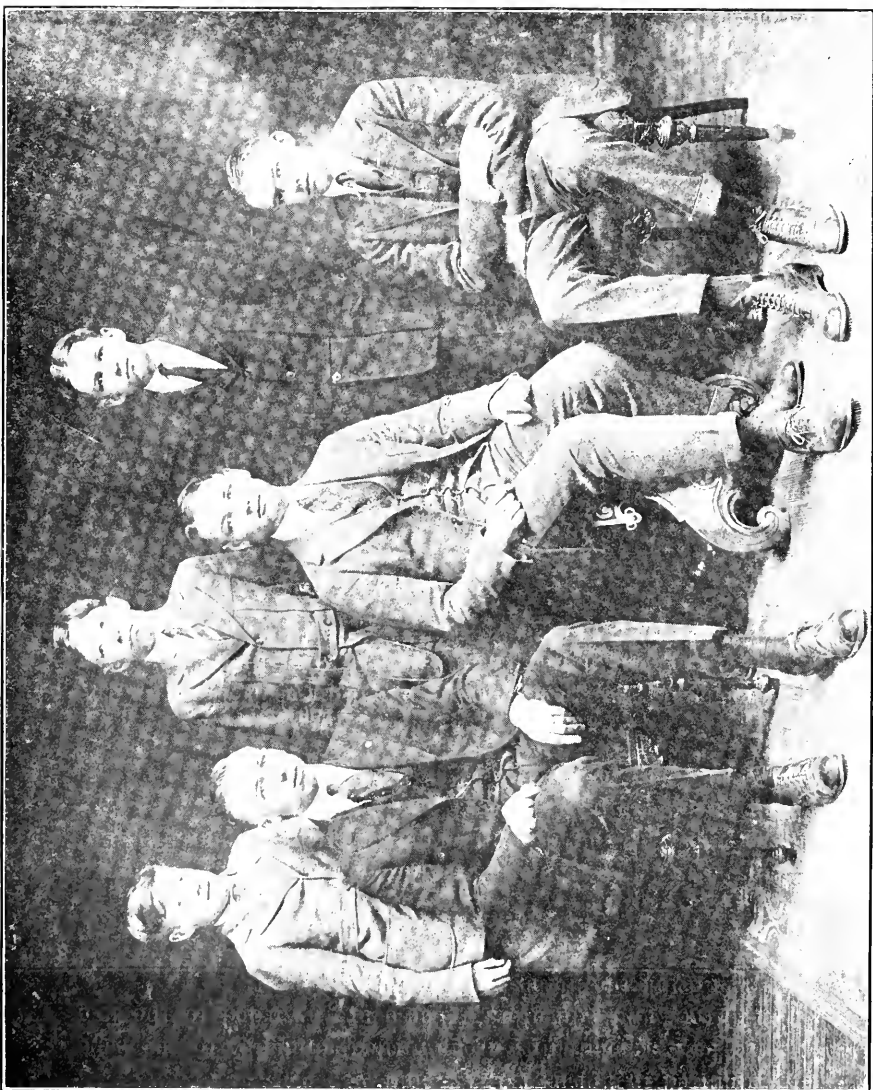
When a boy is entered at the school it is understood that his attendance is controlled by the school. Absence from school except for sickness will result in inconvenience to the student.

The school does not seek to enroll students who require severe restrictions. The right is reserved by the school to dismiss any boy whose conduct, influence, industry, or progress is unsatisfactory in the judgment of the Headmaster.

Tobacco is injurious to the growing boy and its use is forbidden on the school grounds, and in any place where boys appear as a school.

## LUNCH ROOM

A large lunch room is provided in the building. Here one finds a great variety of food, beside a special luncheon prepared for our students. A satisfactory lunch may be had for from thirty to fifty cents.



SCHOLARSHIP MEDAL WINNERS

## **SCHOLARSHIPS**

### **Founders' Scholarships**

Ten founders' scholarships are available for students of exceptional ability who are otherwise acceptable to the school. Fitness of applicants will be determined by written and oral examinations, psychological tests, and by the applicant's previous school record. These are issued to students who are admitted to Forms III, IV, and V.

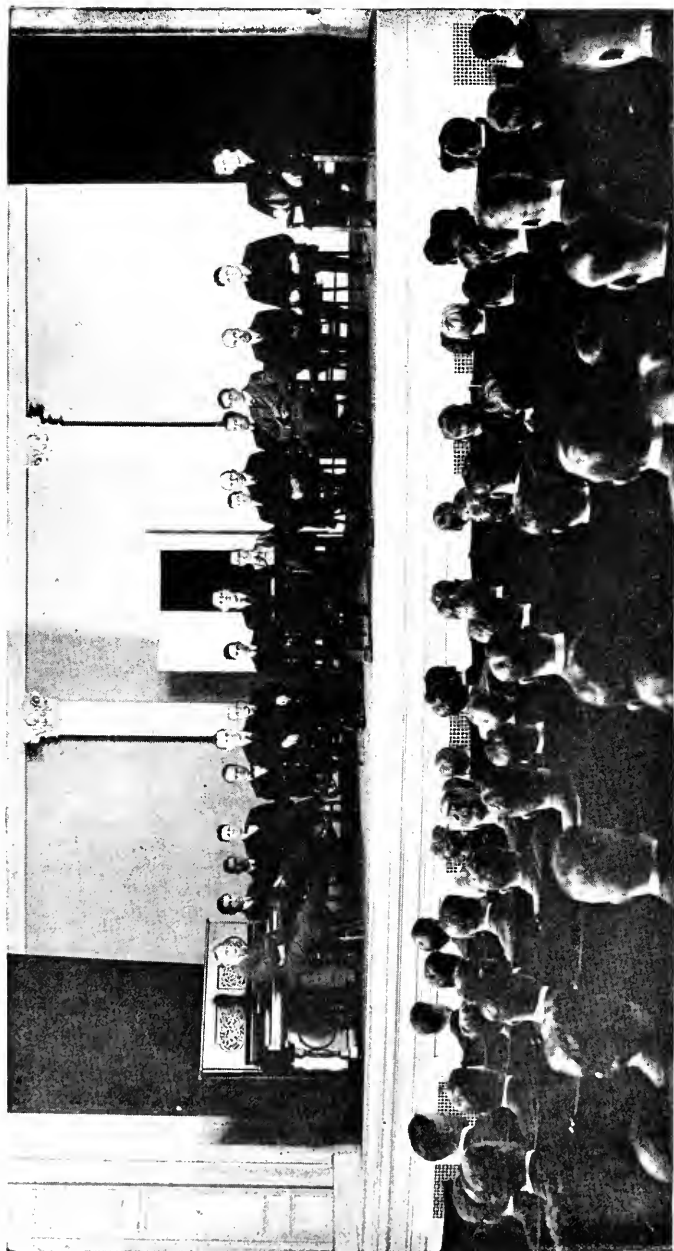
Five half scholarships are awarded annually to the sons of ministers and educators. These are awarded to the five boys who rank the highest of those applying.

### **Alumni Scholarship**

This is issued to the student in the school who has shown the greatest all-round ability in athletics, scholarship and general leadership.

### **Prizes**

A medal is awarded to the student in each Form in the Main School who maintains the highest rank during the year.



AT THE MORNING ASSEMBLY

# Course of Study

## Junior School

### FOURTH GRADE

<b>Arithmetic</b>	The fundamental processes and the beginnings of simple fractions are taught, both in mental and in written work.
<b>English</b>	Language work is given to teach the pupil to talk and write clearly and easily. A high grade of spelling is required.
<b>Reading</b>	Subject matter either correlates with the beginnings of American History or is chosen from standard authors. Memorizing of poetry is required.
<b>History</b>	Beginnings of American History.
<b>Geography</b>	Elements of physical geography, and study of the continents.
<b>Penmanship</b>	Modern business system of penmanship.

### FIFTH GRADE

<b>Arithmetic</b>	Careful attention is given to the essential processes, that the pupils may attain an automatic and accurate use of numbers. Problems, both mental and written, are taken from everyday experiences. Special stress is laid on the use of fractions.
<b>English</b> <b>Composition</b>	Language work is given to develop the ability to think clearly, to speak and write easily and correctly. The forming of simple sentences is taught. A high grade in spelling is required.

<b>Reading</b>	Subject matter correlates with the work in history, or is chosen from standard authors. Memorizing of poetry is required.
<b>History</b>	Beginnings of American History to the Civil War.
<b>Geography</b>	A general study of the continent.
<b>Penmanship</b>	Modern business system of penmanship.
<b>Drawing</b>	Map drawing and illustrating of geography and history. Notebooks are required.

## SIXTH GRADE

<b>Arithmetic</b>	A thorough review of fractions and the accurate use of them is required. The beginnings of percentage, interest and denominate numbers are taught.
<b>English Composition</b>	Language work is given to develop the power of clear and accurate observation, of straight thinking, of finding words to fit the observation and thought, and of arranging thoughts and words in clear and effective order. The formation of clear sentence structure, and the beginnings of paragraphing are taught. A high grade of spelling is required.
<b>Reading</b>	Subject matter correlates with the work in history and geography, or is chosen from standard authors. Memorizing of good literature is required.
<b>Grammar</b>	Analysis of simple sentences, recognition of parts of speech, correct use of pronouns and verbs.
<b>History</b>	Elementary American history from the beginning to the present time.
<b>Geography</b>	A thorough study of the United States, correlating with the work on history.
<b>Penmanship</b>	Modern business system of penmanship.
<b>Drawing</b>	Map drawing and illustrating of geography and history. Notebooks are required.



# Main School

## PREPARATORY DIVISION

Students will select, with the advice of the Headmaster, twenty hours each year from the work offered in a Form, or, if necessary, from the work offered in one or more Forms. Only the student of exceptional ability will be permitted to take more than a normal schedule of hours.

### FORM I

<b>English</b>	Fundamentals of grammar, particularly sentence structure. Spelling, simple oral expression, with emphasis on correct pronunciation. Appreciation of classics, with study of at least four books selected from works of Anderson, DeFoe, Hawthorne, London, Hughes, Scott, Stevenson, and others.	(5)
<b>Mathematics</b>	The fundamental processes of Arithmetic. Fractions, elementary decimals, percentage and mensuration, simpler practical applications.	(5)
<b>French</b>	Six-year course. Practice in conversational French, with emphasis on pronunciation; the acquirement of a vocabulary and the knowledge of conversational idioms; rudiments of formal grammar, with some simple drill.	
<b>Geography</b>	A study of geography according to modern methods, with a general view of political divisions.	(5)
<b>History</b>	Stories of the Ancient World; Hero Stories.	(3)
<b>Manual Training</b>	. . . . .	(2)
<b>Penmanship</b>	. . . . .	(2)
<b>Music</b>	. . . . .	(1)

\* Indicates number of hours a week.

## FORM II

<b>English</b>	Continued study of grammar and spelling and oral expression; the use of the paragraph. Study of at least six books selected from works of Lamb, Cooper, Hawthorne, Scott, Dickens, Stevenson, Plutarch, and others. (5)
<b>Mathematics</b>	Review of work of Form I. Study of commercial uses of percentage and mensuration. More advanced processes applicable to Algebra, simple algebraic equations and geometrical construction and Geometry. (5)
<b>Latin</b>	Five-year course. A beginners' text is used to develop a knowledge of Latin Grammar, particularly in its relation to English Grammar; a good working vocabulary, with attention to English derivation, and facility in the translation of simple sentences from Latin to English, and from English to Latin. (5)
<b>French</b>	Six-year course. A continuation of the work in the First Form. Much reading of easy French. (4)
<b>Elementary Science</b>	Physical Geography, Physiology, Hygiene, Sanitation. Class study of commonplace applications of these sciences. (3)
<b>History</b>	Stories of Mediaeval Europe; biographical instances. (3)
<b>Manual Training</b>	. . . . . (2)
<b>Mechanical Drawing</b>	. . . . . (2)
<b>Freehand Drawing</b>	. . . . . (1)
<b>Penmanship</b>	. . . . . (2)
<b>Music</b>	. . . . . (1)

## FORM III

<b>English</b>	Drill in grammar, punctuation and spelling; oral English continued. Study of elementary composition. Special attention to development of good taste in reading. (5)
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Class study of narratives from the Old Testament, Coleridge's "The Rime of the Ancient Mariner," Irving's "The Sketch Book," and Dickens' "A Tale of Two Cities." Memorizing.

Individual reading of at least one book per month selected from College Entrance Board List. (5)

**Mathematics** Algebra: The fundamental operations, the linear equation and its application to problems; fractions, proportion, square root, simple quadratic equations. (5)

**Latin** Five-year course: A review of the first year's work, practice in a graded reader, and translation of one book of Caesar's Gallie War.  
Three- or four-year course: The first-year Latin book complete. (5)

**French** Six-year course: A formal study of the elements of grammar with practice in reading French. The more common irregular verbs.  
Conversational French. More advanced reading. (4)

Two- or three-year course: A first-year course in French. Study of grammar, reading easy French, conversation. (5)

**Spanish** A course for beginners: Careful drill in pronunciation. The rudiments of grammar and syntax. Exercises containing illustrations of the principles of grammar. Reading of 100-150 pages of easy prose and verse. (5)

**History** Elementary course in United States History: Outline of the important events in chronological order; biographical studies. (3)

**General Science** Elementary Physies, Chemistry, Biology. Introductory Course to advanced work in science in upper Forms. (2)

**Mechanical Drawing** . . . . . (2)

**Manual Training** . . . . . (2)

## FORM IV

**English** Continuation of work of Form III in grammar, composition, and spelling. At least five written and five oral themes each term.

Class study of Addison's "Spectator Papers," Eliot's "Silas Marner," Scott's "Quentin Durward" and "The Lady of the Lake," Arnold's "Sohrab and Rustum," Shakespeare's "Merchant of Venice," and Stevenson's "The Black Arrow."

Individual reading of at least nine books selected from the College Entrance Board List. (5)

**Mathematics** Algebra: Review of the operations of Form III, with more difficult problems. Simultaneous quadratic equations with applications, variables, progressions, the binomial theorem, and logarithms. Introduction to the study of Plane Geometry, including Book I of a standard text. (5)

**Latin** Careful translation of four books of "Caesar's Gallic War," and sight reading in "Caesar," "Nepos," or "Tacitus." Further study of grammar and Latin composition. (5)

**French** Continuation of the formal study of grammar and irregular verbs. Composition and translation of increasing difficulty. Conversational French. (5)

**Spanish** Reading of from 200 to 250 pages. Practice in translating from Spanish to English and vice-versa. Continued study of the grammar. Dictation. Training in a commercial vocabulary and forms. (5)

**History** Brief view of the Eastern nations, with emphasis on their civilization. History of Greece to the break up of Alexander's empire, with special attention to political, intellectual and artistic development. History of Rome to the death of Charlemagne, emphasizing the development of the Roman legal system and the Christian Church. (5)

**Science** A course in Biology to cover the College Entrance Requirements. Lectures, recitations, laboratory and field work. (5)

## FORM V

**English** Continued study of Rhetoric and Composition, with reference to individual qualities of style. Extemporaneous speaking and informal discussion. One oral theme and one written theme each week.

Class study of Tennyson's "The Idylls of the King," Stevenson's "Treasure Island," Bunyan's "Pilgrim's Progress," Shakespeare's "As You Like It," selected short stories, etc. Individual reading of at least one book per month from College Entrance Board List. (3)

**Mathematics** The five books of Plane Geometry according to accepted standards. Emphasis on original proofs and practical applications. (5)

**Latin** Study of Cicero's "Citizenship of Archias," "Manilian Law," and the four orations against Catiline. Sight reading in his essays and letters. Continued study of composition and grammar. (5)

**French** More intensive study of French grammar with irregular verbs. A preparation for the College Entrance Board Examination in Elementary French. Reading of from 300 to 400 pages of modern French prose. (5)

**Spanish** Same Course as given in Form III. (5)

**German** Drill in pronunciation, and the rudiments of grammar. Exercises to fix in mind the forms and to cultivate readiness in translation. Reading of 75 to 100 pages of easy German. (5)

**History** College preparatory course in Mediaeval and Modern History from the death of Charlemagne to the present time. The contribution of the Roman Empire, the Germanic nations, the Mohammed-

dan and the Christian Church, and Mediaeval civilization. The formation of European states and the development of the present political and economic situation. (5)

**Science** A standard college preparatory course in chemistry. Lectures, recitations, and laboratory experiments, with reference to practical applications of chemistry in everyday science and industry. Special emphasis on the disassociation theory and its application to chemical reactions. (5)

**Public Speaking** . . . . . (2)

**Mechanical Drawing** . . . . . (3)

## FORM VI

**English** Continued practice in written and oral composition. Three extended themes are written during the final term. A general survey of English literature from Shakespeare to the present time.

A careful study, extending through the year, of the representative classics selected by the College Entrance Examination Board. For 1920-21-22, Shakespeare's "Macbeth" and "Julius Caesar," Macaulay's "Life of Johnson," Washington's Farewell Address, Webster's Bunker Hill Oration, selections from Wordsworth, Keats, and Shelley. (3)

## Mathematics

**Solid Geometry** The standard content of the four books of Solid Geometry. Special emphasis on visualizing problems. (3)

**Trigonometry** The college entrance requirements in Plane Trigonometry, including functions of acute angles, solution of right and oblique triangles, and practice in the use of logarithms. (2)

**Review Algebra** Intensive preparation for college entrance examinations in elementary and intermediate Algebra. (3)

<b>Latin</b>	Careful reading of the first six books of Virgil's "Aeneid," with a critical study of Books I, II, III, and VI. Sight reading in minor poems and in "Ovid." Appreciation of style.* Continued study of grammar and composition. (5)
<b>French</b>	From 800 to 1,000 pages selected from French Classics. (3)
<b>Spanish</b>	Same course as in Form IV. For students who have studied Spanish one year. (5)
<b>German</b>	Continued drill in grammar and syntax. Exercises in writing German, from texts and dictation. Reading of 150 to 200 pages of German prose and poetry. (5)
<b>History</b>	Advanced course in American History. Particular emphasis on the growth of Federal power and present economic conditions. (5)
<b>Science</b>	The standard college preparatory course in Physics, dealing with the phenomena of mechanics, heat, electricity, sound, and light. Lectures, recitations, and fifty laboratory experiments. Mathematical problems and discussion of practical applications. (5)
<b>Mechanical Drawing</b>	. . . . . (3)
<b>Architectural Drawing</b>	. . . . . (3)
<b>Public Speaking</b>	. . . . . (2)

## TECHNICAL DIVISION

### FORM V

<b>English</b>	Regular course in Fifth Form English. (3)
<b>Mathematics</b>	Plane Geometry completed. (5)
	Applied Mathematics. (3)

<b>Woodworking</b>	Bench work in wood with tools and general speed lathe work from standard designs; pattern-making. (3)
<b>Mechanical Drawing</b>	Lettering, geometrical problems, orthographic projection. Detail and assembly drawings. (5)
<b>Chemistry</b>	Inorganic Chemistry. (5)
<b>History of Commerce</b>	A survey of commerce and the commercial policy of nations. Emphasis on modern conditions. (3)

## FORM VI

<b>English</b>	Regular course in senior English. (3)
<b>Mathematics</b>	Solid Geometry completed. Plane (3)
	Trigonometry completed. (2)
	Applied Mathematics. (3)
<b>Mechanics and Materials</b>	Fundamental principles of machines, statics, stresses, and dynamics, designs of structures, force, determination of center of gravity, momentum of inertia, and similar problems. Study of materials used in machines, buildings and engineering projects and their various properties. (5)
<b>Machine Drawing</b>	Detail and assembly drawings. Freehand sketching as applied to Machine Drawing. Drawing of cams and gears. Tracing and blue-printing. (5)
<b>Science</b>	Advanced course in Physics with laboratory experiments. (5)
<b>Economics</b>	A study of the principles outlining modern business and industrial conditions. Present-day problems including transportation, public ownership and control, and taxation. (3)



## BUSINESS DIVISION

### FORM V

<b>English</b>	Regular course in Fifth Form English. (3)
<b>Spanish</b>	An introductory course in Spanish Grammar and Syntax. Reading of easy Spanish, conversation and business correspondence. (5)
<b>Bookkeeping</b>	The elementary principles of double-entry bookkeeping, short exercises in recording business transactions, in taking trial balances and closing the books; carefully-prepared sets which illustrate modern bookkeeping practices. (5)
<b>Business Arithmetic</b>	Problems in arithmetic sufficient to meet the needs of the student in elementary bookkeeping; especial attention paid to percentage, interest, bank discount, and commission. Rapid calculation. (5)
<b>History of Commerce</b>	A history of the changes that have taken place in industrial organization and their effects upon commerce; a survey of commerce and the commercial policy of nations; emphasis on modern conditions. (3)
<b>Penmanship</b>	A series of exercises and drill for the mastery of muscular movement; instruction in position, speed, and form. Drill on figures, business signs, and symbols. (5)
<b>Spelling</b>	. . . . . (5)
<b>Mechanical Drawing</b>	. . . . . (5)

### FORM VI

<b>English</b>	Regular course in senior English. (3)
<b>Commercial Correspondence</b>	A study of the form and arrangement of business letters. General review of punctuation, preparation of themes in exposition of technical and commercial subjects. (2)

<b>Spanish</b>	Course in Spanish open to those who have studied for one year. Elementary grammar completed. Much reading of easy Spanish.(5)
<b>United States History</b>	Advanced course in American History. (5)
<b>Accounting</b>	A continuation of bookkeeping. Practice sets and exercises illustrating the principles of advanced bookkeeping as applied to mercantile business. Particular attention to the principles underlying the construction of accounts and their classification. The preparation of financial statements, adjustments, and slide rule and logarithms. (2)
<b>Commercial Law</b>	The principles of business law, including contracts, sales, negotiable instruments, agency partnerships and corporation. (2)
<b>Economics</b>	A study of the principles underlying modern business and industrial conditions; present-day problems, such as labor legislation, present-day transportation, public ownership and control, and taxation. Reports and themes on assigned topics. (3)
<b>Business Mathematics</b>	Problems in certain processes required in modern business practice, such as pay-rolls, discounting commercial paper, depreciation, stocks and bonds, insolvency and bankruptcy, consignments and insurance; discussion of graphs, slide rule and logarithms. (2)
<b>Salesmanship</b>	Principles of salesmanship and business efficiency. The development of character and personality, value of time, salesmanship analysis, mental law of sale, human nature, positive and negative qualities. Lectures and selling talks. (3)

# Huntington Summer School

THE Summer Session of the Huntington School opens on the last Monday in June and continues to the second Friday in September.

The aim of the School is to provide tutoring and class instruction for those who are conditioned in grammar school, high school or college subjects; for those who wish to complete a four-year high school course in three years; and for those who wish to make special preparation for entrance examinations to Harvard, Massachusetts Institute of Technology, and other New England colleges.

The program of work includes all the courses accepted for admission by colleges, together with work usually given in the seventh and eighth grades.

The teaching force is made up of the men of the regular school faculty.

The attendance for last Summer Term exceeded one hundred students, many of whom entered Harvard, Yale, Dartmouth, Boston University, Tufts, Massachusetts Institute of Technology, Bowdoin, Amherst, Brown, Massachusetts Agricultural College, and other institutions.

The class sections range from five to ten, and permit of much individual instruction. The program of work is so arranged that a year's work in any course, as ordinarily counted by high schools, is completed during the Summer Session. Students who elect work which they have not before attempted usually pursue only one or two courses. Those who are reviewing are limited only to the amount of work that they can do well.

The tuition rate is \$100 for the season; three-fifths payable upon entering, and the balance at the beginning of the fourth week.

A special circular of this School will be forwarded upon request.

# Educational and Vocational Guidance

THE School endeavors to place the entering student in classes and subjects which are in accord with his purpose. Psychological tests, entrance examinations, previous school records, and recommendations provide a sound basis which are to judge the student's fitness for particular grades of work. When once placed, his progress is followed very closely throughout the year, by means of periodic tests and examinations, the results of which are reported to the office with detailed statements regarding the student's work. Students who do not show satisfactory results are conferred with and the cause of the trouble determined.

The School seeks to enable the student who will continue his education beyond the secondary school stage to select as intelligently and early as possible the vocation in which his interests, natural aptitudes and abilities will make him most successful, and to direct his course toward it. It seeks also to advise the student who does not expect to enter a higher institution of learning of the vocations best suited to his training, ability and inclinations, and to provide suitable courses for a number of such vocations.

Vocational talks are given during the year by prominent men to the student body. These talks have been helpful to many students in bringing to them the qualifications necessary for different occupations, and in aiding many to choose the field of work best suited to their aptitudes. These talks are given by specialists in various fields, and are made as concise and practical as possible.

# Financial

The rates of tuition of the Huntington School are as follows :

Junior School—Fourth, Fifth and Sixth Years,       \$250

Main School—Forms I, II, III, IV, V, and Senior,   \$375

The tuition fees are payable in advance; three-fifths at the date of entrance, and two-fifths on or before January 1. Students entering before November 15 are charged from the beginning of the school year.

**Registration Fee**       A registration fee of \$5 is due from all new students when a place is reserved. It is a part of the tuition and will be credited on the first payment. When once paid, it will not be refunded. To insure a place in the School, registration should be made before September 1.

When an applicant enrolls in the School, it is understood, unless otherwise specified, that he enrolls for the entire year, and is liable for the tuition for that period.

**Books and Supplies**       All students buy their own books and supplies. This material can be purchased from the book store located in the building.

**Manual Training**       The fee for students who take manual training is \$5 per year.

**Chemistry**       Owing to increased cost of chemical supplies, in many instances five to ten times the cost in former years, a fee of \$10 will be charged all students taking chemistry.

**Huntington Student Association Fee** All students pay a fee of \$25 to the Huntington Student Association. The money so secured is used to maintain the Huntington School athletic field and to provide the funds for the many social and athletic activities of the school, including the school paper published weekly, the student year book, and admission to all athletic contests. Fifteen dollars is due on the first payment of tuition and ten dollars on the second.

**Graduation** All students graduated from the School are charged a graduation fee of \$10, which covers the cost of diploma and expenses incidental to graduation.

**Students' Tickets** Students who live in suburban towns can secure railroad tickets at greatly reduced rates by applying at the office of the railroad. Students of the school are permitted to ride on the Boston Elevated on payment of one-half fare.

# References

HENRY S. ADAMS	55 Union Ter., Jamaica Plain
FREDERICK W. ALLEN	203 Summer Ave., Reading
DR. MARSHALL H. BAILEY	1569 Mass. Ave., Cambridge
REV. AUSTEN K. DEBLOIS	1411 Beacon St., Brookline
MARTIN A. BROWN	7 Stratford Rd., Winchester
HERBERT A. BRYANT	175 West St., Braintree
HERMAN L. DODGE	163 Norfolk St., Wollaston
JOHN W. FORBES	46 Townsend St., Roxbury
EDWARD E. GAGE	Canton, Mass.
THOMAS J. HARPER	12 Waldeck St., Dorchester
WARREN T. HOLLIS	139 South St., Boston
HARRY H. HUMPHREY	25 Meredith St., W. Roxbury
D. WILLARD LEAVITT	49 Maple St., Roxbury
DR. J. RUSSELL MACKINNON	41 Pond St., Jamaica Plain
CECIL H. MARBLE	95 East Squantum St., Atlantic
JAMES H. MORRISON	81 Orchard St., Belmont
ALBERT P. MORSE	10 Upland Rd., Wellesley
FRANK W. PADELFORD	9 Allerton Rd., Newton Highlands
FRANK C. SHEPHERD	22 Littell Rd., Brookline
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MRS. COLVER J. STONE	Andover
WILLIAM C. B. TAYLOR	8 Rocky Hill Ave., Dorchester
FRED M. TEMPLE	228 Highland Rd., Andover
JAMES F. YOUNG	Quincy

# Student Organizations

## STUDENT COUNCIL

DONALD P. LOKER, President  
WENDELL F. PIERCE, Secretary  
GEORGE E. ALGAR  
WILLIAM J. GLENNON  
GEORGE P. TEMPLE  
CHANDLER WOODS

## ATHLETIC COUNCIL

GEORGE P. TEMPLE, President  
WENDELL F. PIERCE, Secretary  
DR. H. P. COLTON, Physical Director  
CHESTER A. JENKINS, Coach  
ERNEST M. MOORE, Coach  
GEORGE E. ALGAR  
WILLIAM J. GLENNON  
RAYMOND A. ROBERTSON  
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## THE POPULAR SCIENCE CLUB

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## THE MANUAL ARTS CLUB

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# Huntington Alumni

## CLASS OF 1912

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NEWCOMB, GARFIELD  
ODIORNE, KENNETH W.

## CLASS OF 1913

ABBOTT, W. LEE  
BAKER, ALFRED WORTHINGTON  
BISHOP, GEORGE, JR.  
BLOOD, ROBERT  
\*CARTWRIGHT, PAUL  
DICKSON, ARTHUR D.  
FITCH, ROYAL E.  
FORD, THOMAS H.  
LANDERMAN, JOHN  
LARSON, FRED

MACKILLOP, SAMUEL  
MARSILIOUS, NEWMAN M.  
NILES, THORNTON F.  
\*QUALEY, JAMES EMERSON  
SMITH, RUSSELL B.  
SPEARS, EVERETT  
STEELE, ALFRED  
TAYLOR, HAROLD  
WATSON, FRED A.  
WEST, FREDERICK

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BELONGA, BENJAMIN QUINT  
BISHOP, HARRY DUNCAN  
BORUCHOFF, HENRY  
\*CARLAND, WILLIAM HARVEY  
CHAMBERLAIN, NEWELL BURNAP  
CURRIE, WARREN GILBERT  
CUTTER, HIRAM EDWIN  
ELDRIDGE, ADDISON ELWELL  
FARRINGTON, ARTHUR E.  
FINELLI, JOHN  
GODDU, PAUL DUDLEY  
HIGGINS, ERNEST RUSSELL  
IOVANNA, NICHOLAS  
JACKSON, ROBERT E.  
KERR, FRANK STANLEY  
LAMSON, HAZEN FRANCIS

LANGILL, HENRY PRAY  
MACDONALD, WILLIAM FRANCIS  
MANNY, CARLOS CONSTANTINE  
MILLER, ALAN  
MORSE, GILEAD D.  
\*NYE, RAYNOR BASSETT  
PARRETT, CHAUNCEY GILDERSLEEVE  
SALT, GEORGE EGERTON  
SKINNER, ROBERT ARTHUR  
SMITH, RODERICK B.  
TAYLOR, ANDREW WILLIAM  
TULLY, FREDERICK JOSEPH  
TUTTLE, WILLIAM  
WEBSTER, NORWOOD  
WERMUTH, EUGENE FRANCIS  
WHEELER, RALPH LORING  
WILKINS, HERBERT I.

## CLASS OF 1915

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BAUCH, CHARLES EVERETT  
BAUM, GEORGE LOCKHART  
BIRD, WHITWORTH FONTAINE  
BLAKE, ROBERT AUSTIN  
BRADLEY, ROBERT IVAN  
BURNHAM, CLIFFORD GORDON  
COLLINSON, STANLEY EARL  
COOPER, RAPHAEL DUNHAM C.  
CUSHING, ALBERT STANLEY  
CUTTING, RALPH CURTIS  
DAWES, BRADLEY STEVENS

MCCULLOCH, LAWRENCE  
MANNING, WARREN HAROLD  
MANSON, WARREN HUBERT  
MONK, NEWTON  
O'CONNOR, ARTHUR MAXWELL  
O'HARA, SKIDMORE  
PETERS, GRANT BRUNO HUGO  
PRATT, WALTER HENRY  
PROBERT, WALTER HANDFORD  
ROBINSON, GEORGE WARREN  
ROMAN, JOHN BAPTISTE  
SAMPSON, GEORGE AUSTIN

\*Deceased

EDMONDS, REGINALD WHITNEY  
 ELLIOTT, JOHN TELFORD  
 FREEMAN, THOMAS LAWRENCE  
 GOLDSMITH, LLOYD EDWARD  
 HODGES, FORREST EGGLESTON  
 HOLLIDAY, HAROLD HOVEY  
 JANES, HAROLD BIXBY  
 JONES, CERENO ST. CLAIRE  
 LEONARD, WALTER GOULD  
 LUNDQUIST, ARTHUR

SHANNON, CHARLES WILLIAM  
 SMITH, MINOT FULLERTON, JR.  
 SMITH, WILLARD FRANCIS  
 STARBUCK, ROBERT BARKLEY  
 STEWART, HAROLD ARTHUR  
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 \*VERDER, WALTER MONTGOMERY  
 WESTWOOD, RICHARD WILBUR  
 ZIEGLER, CHARLES MELVIN

#### CLASS OF 1916

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 \*BELL, CHARLES FRANK  
 BOSSI, EUGENE ANTHONY  
 BRAINARD, ROBERT FRIEND  
 CHESLEY, WOLCOTT ELLSWORTH  
 CLEARY, ALEXANDER EDGAR  
 COBURN, JESSE THEODORE  
 COLLISON, ARTHUR WILLIAM  
 DEAN, EDWARD KEITH  
 FLEMING, CARL LEON  
 FOWLER, ALBERT EDWIN, JR.  
 GODDU, LLOYD WHITMAN  
 HADDOCK, CHARLES COLVOCORESS  
 HATHAWAY, SAMUEL DEVEREAUX  
 JACKSON, LEON FARNHAM  
 KIMBER, FRANK HUGHES  
 KRONE, LESTER FREDERICK

MARLING, WENTWORTH JOHNSON  
 MILLIGAN, RANDOLPH HALL  
 MOORE, WALTER CHADBOURNE  
 MORRILL, CHARLES FREDERICK  
 OSGOOD, CARLETON GUILD  
 PARKER, ALBERT DINNIE  
 PEDERSEN, NICHOL ANDREW  
 POMERY, RICHARD BRUCE  
 RICH, EDWIN NEWELL  
 RIPLEY, HUBERT GEORGE, JR.  
 SEALE, WILLIAM ARNOLD  
 SHUM, ALDEN FRANCIS  
 STICKEL, PAUL JELLY  
 SYMONDS, MILTON WARREN  
 TOOMEY, WILLIAM DANIEL  
 TRUE, OSMOND SMALLEY  
 WILLIAMSON, REGINALD CHARLES

#### CLASS OF 1917

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 BENEDICT, THOMAS HAROLD  
 BOWEN, DAVID CUMMINGS  
 CALDWELL, WELLINGTON LORD  
 CARPER, HAROLD GOODRICH  
 CLARKSON, ERNEST DEWEY  
 CLEVELAND, THOMAS VOSE  
 CREED, FRED NELSON  
 DAY, ROLAND WIGHT  
 DICKSON, ROBERT WEBBER  
 DRISCOLL, WILLIAM FRANCIS  
 FOSTER, KENDELL W.  
 GILLETTE, CLIFFORD KEENE  
 GRAHAM, FRANCIS JOSEPH  
 HARLOW, EARL KENNETH  
 HARPER, ELMER BRUCE  
 HARRIS, GEORGE BLANCHARD, JR.  
 HOLT, GEORGE A.  
 HOMANS, DONALD EDWARD  
 HUNTINGTON, GILBERT GERRISH

JACKSON, HAROLD CUMMINGS  
 JEWELL, EDMUND FRANCIS  
 LAWRENCE, STANLEY DONALD  
 LORD, EDWIN AUGUSTUS  
 MCQUISTON, IRVING MATTHEW  
 MORSE, WILLIAM MCQUILLEN  
 MUNROE, RUSSELL FELTON  
 PRESTON, BURNHAM GODDU  
 REID, WILLIAM JOSEPH  
 SHEPARD, WINTHROP RUSSELL  
 SHORT, RALPH WILLIAM  
 SNOW, LAWRENCE FORRISTALL  
 SYMMES, CHANDLER WHITING  
 TAFT, LORADO EDSON  
 TALMADGE, NELSON ALCON  
 TUCKER, CHARLES WILLIAM  
 TURNER, FRANK BRUCE  
 WALKER, LOTHROP EARL  
 WHITE, EDWARD ALDRICH

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\*Deceased

## CLASS OF 1918

AKERLY, ERNEST LESTER  
 BRANDON, ORVILLE GERRISH  
 CONNOR, JAMES EDWARD  
 CROWELL, HOWARD GARDNER  
 FITTS, ROSCOE WILLIAM  
 GALLAGHER, ERNEST FRANCIS  
 GRANT, DONALD LIVINGSTONE  
 HALL, ELISHA WINTHROP  
 HEMENWAY, RALPH WALTER  
 HUMPHREY, ARTHUR ROSS  
 HUNTINGTON, CHARLES EDWARD  
 JERNEGAN, ELLIOT CLIFTON, JR.  
 KIGGEN, THOMAS EWEN  
 MANCHESTER, PAUL

MCLEOD, ROBERT CROFTON  
 MEHAFFEY, GRAHAM TYLER  
 MORRISON, JAMES MURRAY  
 MORSE, DAVID  
 PROUT, GEORGE RUSSELL  
 ROBART, FRANCIS HAROLD  
 RUSSELL, CLARENCE WILSON  
 SHEPHERD, THOMAS ELWELL  
 STRAUSS, JACK HECHT  
 STETSON, RICHARD PRATT  
 SWAIN, KENNETH FOSTER  
 TAUSSIG, FELIX, JR.  
 WOLF, JACOB ROBERT

## CLASS OF 1919

ALMY, ROBERT TILLINGHAST  
 BARKER, CHARLES KIMBALL  
 BILLINGS, RAYMOND MACKAY  
 BREEN, THOMAS GEORGE  
 BROOKE, PERCY ALBERT  
 BROWN, LESTER ARTHUR  
 BRUNS, RALPH FOWLER  
 DAVENPORT, ARTHUR WINTHROP  
 DEAN, ARTHUR SPROTT  
 DIK, WILLARD BLAKE  
 EHELICH, LOUIS HECHT  
 ESTES, WALTER EDWIN  
 FARNSWORTH, CHARLES LUKE  
 FLYNN, BERNARD FRANCIS  
 GRANGER, DWIGHT LUTHER  
 GRAY, HENRY WARREN, JR.  
 GUTTERSON, LYMAN PEARSON  
 HALLERAN, THOMAS LEONARD  
 HOLMES, GEORGE HENRY, JR.  
 HUNT, ALBERT MERRILL  
 JETTER, FRANK JACOB

LARRABEE, EDWIN NOBLE  
 LARRABEE, JOHN WHITFIELD  
 LIEBSCH, ELMER WILLIAM  
 MAIRS, DAVID KELSO  
 MORSE, LEONARD HENSHAW  
 MUIR, WILLIAM EDMUND  
 MYERS, NORMAN J.  
 PALMER, RICHARD STUART  
 PREBLE, CLARENCE EDWARD  
 REEF, JAMES HENRY, JR.  
 SHERMAN, HOWARD FRANKLIN  
 SMITH, BENJAMIN LINCOLN  
 TATE, CHRISTOPHER  
 TRAUTVETTER, ROY WILLIAM  
 WATERS, HENRY COOK  
 WILLIAMS, FRED PAUL  
 WILLIAMS, ROBERT TASCO  
 WOLF, BERNARD MARK, JR.  
 WOOD, ABEL FARNSWORTH  
 YOUNG, PHILLIP TAYLOR

## CLASS OF 1920

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 BRYANT, HAROLD HURLBURT  
 CASSON, WESLEY COLLVER  
 CHRYSTAL, JOHN ELLIOTT  
 COOLEY, HOWARD HEWETT  
 CRAIGIE, HUGH MEDEX  
 DEDRICK, ALBERT CLINTON  
 DODDS, OSCAR HAROLD  
 DODGE, NORMAN LEWIS  
 EATON, ELLIOTT FULLER  
 FAUST, HERMAN OTTO  
 FLEISHER, THEODORE  
 FORBES, JOHN WINSOR  
 FRANKLAND, JOSEPH ALEXANDER

FURFEY, ROBERT MORTIMER  
 HERSEY, WALDON BRADBURY  
 HOLLIS, WARREN THATCHER, JR.  
 JENKINS, ARNOLD DEIHL  
 VON LABAU, KARL  
 MORSE, MILTON ISAAC  
 MUIR, ROBERT BRUCE  
 PARKER, CARL STEPHEN  
 STAPLES, PAUL EMERSON  
 TAYLOR, NORMAN CHARLES  
 WADE, EDWARD ALBERT  
 WELLS, RALPH HORACE  
 YOUNG, EDWARD JONATHAN  
 ZARTARIAN, SARKIS MAD

## CLASS OF 1921

ALCAR, GEORGE EDWARD  
ARCHIBALD, CLARENCE HENRY  
BOGGS, HUBERT CLARE  
BOSWORTH, FREDERICK LYMAN  
BUCK, RICHARD CLARK  
CAREY, CHARLES ALFRED  
COHON, MORRIS  
COMFORT, ROBERT FREEMAN  
DORNAN, GEORGE MILLER  
GOODHUE, ALBERT BURNHAM  
GORRIAEAN, MANUAL  
HUSS, FREDERICK IVES  
KEOUGH, JOHN JOSEPH  
KING, ROBERT GRAHAM, JR.

KOELSCH, FREDERIC JOSEPH  
LOKER, DONALD PRESCOTT  
LONG, FRANK JAMES  
MANNING, EDWARD MORGAN  
MARBLE, CECIL CARLTON  
PACKARD, GEORGE QUINCY  
PADELFORD, NORMAN JUDSON  
PIERCE, WENDELL FORSTER  
ROBINSON, RALPH MORRISON  
SHAPLEIGH, DAVID MILLER  
THORP, EDWARD GEORGE  
VING, JOHN CARVER  
WITHERBEE, HAROLD BERKELEY

# Registry of Students

Adams, Barrett  
 Adams, Charles Clark  
 Adams, Ernest Albion  
 Adams, Frank Edwin  
 Algar, George Edward  
 Allen, Earl Francis  
 Allen, Frederick William, Jr.  
 Anctil, Joseph A. A.  
 Anderson, John Grant  
 Andrews, Charles Gardner  
 Anthony, Hilliard H.  
 Archibald, Clarence Henry  
 Bailey, Albert Eliot  
 Baker, William Samuel  
 Ball, William B.  
 Bamburgh, William C., Jr.  
 Bane, Thomas Joseph  
 Banwell, Arthur W.  
 Barnes, Arthur Carrington  
 Beale, Reginald V.  
 Beckwith, Roswell C.  
 Bigelow, Louis Kimball  
 Bigelow, Robert Mansfield  
 Boggs, Hubert C.  
 Bolles, Fred Trowbridge  
 Bond, Raymond Harry  
 Bosworth, Frederick Lyman  
 Breck, James Lloyd  
 Brown, Roy Shepard  
 Bryant, Thomas Marble  
 Buck, Richard Clark  
 Bullard, Edward Allen  
 Callahan, John Francis  
 Campbell, William Malcolm  
 Carey, Charles Alfred  
 Carney, John Charles  
 Castle, Robert Wellington  
 Chalmers, Thomas Marshall  
 Chamberlain, Rowland N.  
 Chandler, Perry Kean  
 Chesterton, Arthur Devereaux  
 Chevalier, Frederick Richmond  
 Chevalier, Samuel R.  
 Chisholm, Leon Stanley  
 Christie, Milton Dudley  
 Cochrane, Lawrence W.  
 Cohon, Morris  
 Collins, Joseph Warren  
 Comfort, Robert Freeman  
 Condon, Lawrence Urquhart

Jamaica Plain  
 Jamaica Plain  
 Dorchester  
 Newburyport  
 Dorchester  
 Allerton  
 Reading  
 Nashua, N. H.  
 West Roxbury  
 Allston  
 Needham  
 Brookline  
 Cambridge  
 West Somerville  
 Marblehead  
 Newtonville  
 Woburn  
 Woburn  
 Boston  
 Roxbury  
 Canton  
 Natick  
 Natick  
 Nebraska  
 Hyde Park  
 Wethersfield, Conn.  
 Medford Hillside  
 Brookline  
 Winchester  
 Wollaston  
 Reading  
 Wrentham  
 Brookline  
 South Boston  
 Charlestown  
 South Natick  
 Melrose  
 Dorchester  
 Arlington  
 Medford Hillside  
 Brookline  
 Boston  
 Boston  
 Woonsocket, R. I.  
 West Medford  
 Melrose  
 Westwood, N. J.  
 Roslindale  
 Winchester  
 West Somerville

Cooling, Stanley Holloway  
 Cox, Robert Lewis  
 Coyne, Charles E.  
 Crawford, John Thompson  
 Cross, Joseph Ralph  
 Crowley, Edward F.  
 Cummings, Edward Winchester  
 Curtis, Harry Melville, Jr.  
 Cutter, Charles Appleton  
 Daloze, Laurent Albert  
 Dalton, William J.  
 Darling, Bertram Van Wort  
 Davenport, Edward Augustus  
 Davenport, Everett W.  
 Day, James E.  
 Daybert, George William  
 DeMillia, Guy Nathan  
 Dill, Leslie Mortimer  
 Dodge, Norman Lewis  
 Donahue, Cornelius Patrick  
 Dornan, George Miller  
 Driscoll, James J.  
 Dunn, Carleton Murdock  
 Earle, Lawrence S.  
 Emerson, Frederic Heron  
 Emerson, Henry Morse  
 Emery, Charles Lorimer  
 Eppler, Andrew, Jr.  
 Evans, William Amos, Jr.  
 Faber, Ernest C.  
 Fagan, Clarence  
 Fahey, Joseph P.  
 Flaherty, Charles E.  
 Flaherty, James A.  
 Gagnon, Ernest Joseph  
 Gallagher, Bradford Dodge  
 Garey, DeMelle Grout  
 Gaskins, Arthur Lawrence  
 Gaudet, Earle  
 Geary, John Ambrose  
 Geddes, Donald P.  
 Gelalles, Achille George  
 Glennon, William Joseph  
 Goodhue, Albert Burnham  
 Gorriaran, Manuel  
 Granstrom, John Henry  
 Greely, C. Phillip  
 Greene, A. Bartlett  
 Greene, Harold Forest  
 Greist, P. Raymond, Jr.  
 Hall, Edward Bass  
 Hallberg, Carl J.  
 Hamilton, Gordon  
 Harold, Edward Joseph  
 Harper, John Edward  
 Harwood, Charles E., 2nd  
 Herrick, Carmon E.

Natick  
 Boston  
 Watertown  
 Kittanning, Pa.  
 East Milton  
 Roxbury  
 Chelsea  
 Swampscott  
 West Roxbury  
 Roxbury  
 Andover  
 Arlington  
 Somerville  
 Beverly  
 Somerville  
 Woburn  
 Cambridge  
 Quincy  
 Wollaston  
 South Boston  
 Whitman  
 Dorchester  
 Dorchester  
 Milton  
 West Roxbury  
 West Roxbury  
 Lynn  
 East Lynn  
 Florida  
 Boston  
 East St. Louis, Ill.  
 Maine  
 Waltham  
 Dorchester  
 Manchester, N. H.  
 West Roxbury  
 Medford  
 Milton  
 Allston  
 Fort Strong  
 Somerville  
 Lynn  
 Malden  
 Beverly  
 Habana, Cuba  
 Roxbury  
 Needham  
 Boston  
 Dorchester  
 New Haven, Conn.  
 Cambridge  
 Quincy  
 Brookline  
 Dorchester  
 Dorchester  
 Lynn  
 Beverly

Higgins, Roland Sutherland	Swampscott
Hill, Henry Bertram	Needham
Hill, William Henry	Brookline
Holland, Walter Herman	Brookline
Homer, Edmund S.	Roxbury
Hurlburt, Marshall P.	Boston
Huss, Frederick Ives	Roxbury
Huss, Robert William	Roxbury
Hutchinson, William Clinton	Dorchester
Ironmonger, Thomas D.	Jamaica Plain
Jameson, G. Leonard	Brookline
Jennings, Aubrey Fisk	Winthrop
Jordan, Charles Gilbert	East Braintree
Kaufman, Leroy J.	Jamaica Plain
Keen, Albert Edward	Malden
Keough, John Joseph	East Boston
Ketterer, John E.	Quincy
King, Robert Graham, Jr.	Laconia, N. H.
Kingsbury, Charles Hardwick	Joplin, Mo.
Knight, Percy Eugene	Boston
Knott, Kenneth Woodhouse	Boston
Koch, Robert Gordon	Brookline
Koelsch, Frederic J.	Roslindale
Langborg, Kurt	Boston
Lathrop, George Coleman	Brookline
Lathrop, Russell Vernon	Ipswich
Lawless, Kenneth Oakes	Auburn, Me.
Leavitt, Albert Willard	Roxbury
Leamon, Alfred Franklin	Jamaica Plain
Leonard, Curtis Scott	Medford
Libby, Horace Kezar, Jr.	Winchester
Loker, Donald P.	Natick
Long, Frank	West Roxbury
Lynch, Thomas J.	Dorchester
MacKenzie, Nelson Fletcher	Malden
MacKinnon, Ralph Henry	Brookline
MacLeod, Duncan Fitch	Marlborough
McCarter, Kenneth T.	Minot
McCarthy, Daniel Joseph, Jr.	South Boston
McCloud, Donald Gooding	Stonham
Melsaac, Lloyd J.	East Boston
Magee, Lawrence K.	Charlestown
Mahoney, Joseph Vincent	Sharon
Mahoney, Paul	Brookline
Mahoney, William Joseph	Waltham
Maitman, Russell Lyle	Dorchester
Manning, Edward Morgan	Lynn
Marble, Cecil Carlton	Atlantic
Marshall, John Gelger	Boston
Marston, Dana M.	Brookline
Milstead, Lucian S.	Illinois
Mitchell, Walter Frederick	Brookline
Mitchell, William	Needham Heights
Mouan, Joseph Lawrence	Andover
Moore, Thornton Loring	Dorchester
Moran, Alfred James	South Boston
Mullen, Francis Joseph	Boston



Murphy, T. Williston	Boston
Murphy, William N.	Dorchester
Newman, Richard Arno	Wollaston
Niechay, Frank Karl	Jamaica Plain
Nolte, Whitney Robert	Weston
Norris, Donald Kenneth	Malden
Norris, Robert Walter	Malden
Osborn, Wendell A.	Somerville
O'Connell, John J.	Newburyport
Ohlund, Clifford Sidney	Dorchester
Ondricek, Karl Jan	Boston
Packard, George Quincy	Stoncham
Paddock, Albert William	Boston
Padelford, Norman Judson	Newton Highlands
Parke, John Brandt	Boston
Parker, Curtis Kimball	Woburn
Paul, Alfred Ransom Pearse	Melrose Highlands
Perkins, Ralph Taylor	Winchester
Perrin, Everett Irving	Attleboro
Perry, Elliott William	Wellesley Hills
Person, Carlton Grant	Newton
Pierce, Wendell Forster	Cliffondale
Pizanti, Jack	Roxbury
Pollock, Harry Meeker, Jr.	Brookline
Radeliffe, Hartwell Leroy	Gloucester
Rank, Albert Melville	Wollaston
Rasten, Nicodemus A.	South Boston
Reynolds, John Henry	Everett
Ricard, Arthur	Lawrence
Robertson, Raymond A.	Somerville
Robinson, Gail William	Beverly
Robinson, Ralph Morrison	Sherman Mills, Me.
Rock, Norman Easton	Dorchester
Rondina, Edmund Peter	Winchester
Ross, George D.	Pittsfield
Rothschild, Frederick Timminus	Boston
Rufer, Fred	West Somerville
Runcy, Francis Andrew	Medford
Russell, Kenneth Berkely	Cambridge
Schofield, Robert Eaton	Newton Lower Falls
Shannon, George Vaughan	Salem
Shapleigh, David Miller	West Lebanon, Me.
Smith, James E.	Cambridge
Soule, Norman Westwood	Dorchester
Soule, William Ellsworth, Jr.	Dorchester
Spellman, Patrick Francis	Boston
Spinney, William Aborn	West Medford
Stark, Herbert Archibald	Jamaica Plain
Stetson, George W., Jr.	Hingham
Stevens, Herbert William	Boston
Stewart, Robert C.	Dorchester
Story, Jonathan, Jr.	Winthrop
Sullivan, James Coyle	Taunton
Sutherland, Holton Mead	Swampscott
Sweetnam, Floyd Austin	Bedford
Taylor, John Howard	Dorchester
Tebbetts, E. Lawrence	Holliston

Temple, George Price	Andover
Thorp, Edward G.	West Roxbury
Tobben, Frederick Shattack	Wollaston
Toomey, Joseph D.	South Boston
Torrey, Ralph C.	Wellesley Hills
Trinque, Arthur Joseph	Gardner
Trout, John Moore, Jr.	Chelsea
Turcotte, Joseph George	Taunton
Tyler, Norman Edwin	Roxbury
Vining, John C.	Lynn
Waite, Frederick	Allston
Warner, Arthur S.	Boston
Warren, George C.	West Somerville
Waterous, Richard Goodwin, Jr.	Willimantic, Conn.
Webster, Enoch	Sanford, Me.
Wenzel, William Lawrence	Wakefield
Wetherbee, Harold Berkeley	Concord
Wetmore, Robert Bruce	Jamaica Plain
Wheeldon, Edward Stanley	Worcester
Williams, Minot H.	Boston
Williams, Rayford A.	Stoneham
Winner, Harry Eugene	Brockton
Winter, James S., Jr.	Mansfield
Woodman, Edwin Irving	Danvers
Woods, Chandler	Brookline
Wright, William Pope	Concord
Yee, Wallace H.	Boston
Ziegler, Theodore William	East Lynn





# **NORTHEASTERN PREPARATORY SCHOOL**

## **CATALOG 1922-1923**

**Boston Young Men's Christian Association**  
**316 Huntington Avenue      Boston 17, Mass.**

# **NORTHEASTERN UNIVERSITY**

## **DAY SCHOOLS**

### **SCHOOL OF ENGINEERING**

Four-year courses in Civil, Mechanical, Electrical, Chemical, and Administrative Engineering, leading to the degrees of Bachelor of Civil, Mechanical, Electrical, and Chemical Engineering. Conducted in co-operation with engineering firms. Students earn while learning. Work conducted at Boston.

### **SCHOOL OF BUSINESS ADMINISTRATION**

Four-year course in Business Administration leading to the degree of Bachelor of Commercial Science. Students may specialize in Industrial Management, Marketing, Finance, and Accounting. A two-year course leading to the Certificate of Proficiency. Work conducted at Boston.

## **EVENING SCHOOLS**

### **SCHOOL OF LAW**

(Co-educational)

Four-year course leading to the degree of Bachelor of Laws. Preparation for Bar Examination and practice. High scholastic standards. A limited number of mature special students admitted each year. Work conducted at Boston, and in Divisions at Worcester, Springfield, and Providence.

### **SCHOOL OF COMMERCE AND FINANCE**

(Co-educational)

Four-year courses in Professional Accounting and Business Administration leading to the degrees of Bachelor and Master of Commercial Science. Special two-year courses for those desiring intensive specialization. Work conducted at Boston, and in the Divisions and Branches at Worcester, Springfield, Providence, Bridgeport, New Haven, Lynn, Malden, and Newton.

### **EVENING POLYTECHNIC SCHOOL**

Three-year courses in Civil, Mechanical, Electrical, Chemical, Structural, Industrial and Automotive Engineering leading to a diploma. Trains for positions of trust and responsibility. Work conducted at Boston.

### **EVENING ENGINEERING INSTITUTE**

Three-year general engineering course, with opportunity for specialization in Mechanical, Civil or Electrical Engineering, and leading to a diploma. Work conducted in the Divisions at Worcester, Springfield, New Haven, and Bridgeport.

### **NORTHEASTERN PREPARATORY SCHOOL**

Courses in usual high school subjects leading to a diploma. Three sixteen-week terms each year. It is possible for students to meet college-entrance requirements in from three to five years. Work conducted at Boston and in Divisions at Worcester, New Haven, and Providence.

### **VOCATIONAL INSTITUTE**

A diversified program of short intensive courses including all phases of Automotive industry with special instruction for owners, salesmen, mechanics, and chauffeurs. Work conducted at Boston.

### **DEPARTMENT OF UNIVERSITY EXTENSION**

Home Study courses in co-operation with the United Y. M. C. A. Schools. Classes organized and lectures conducted in cities and towns throughout New England, and in co-operation with leading corporations and business concerns.

For further information concerning any of the foregoing schools

Address

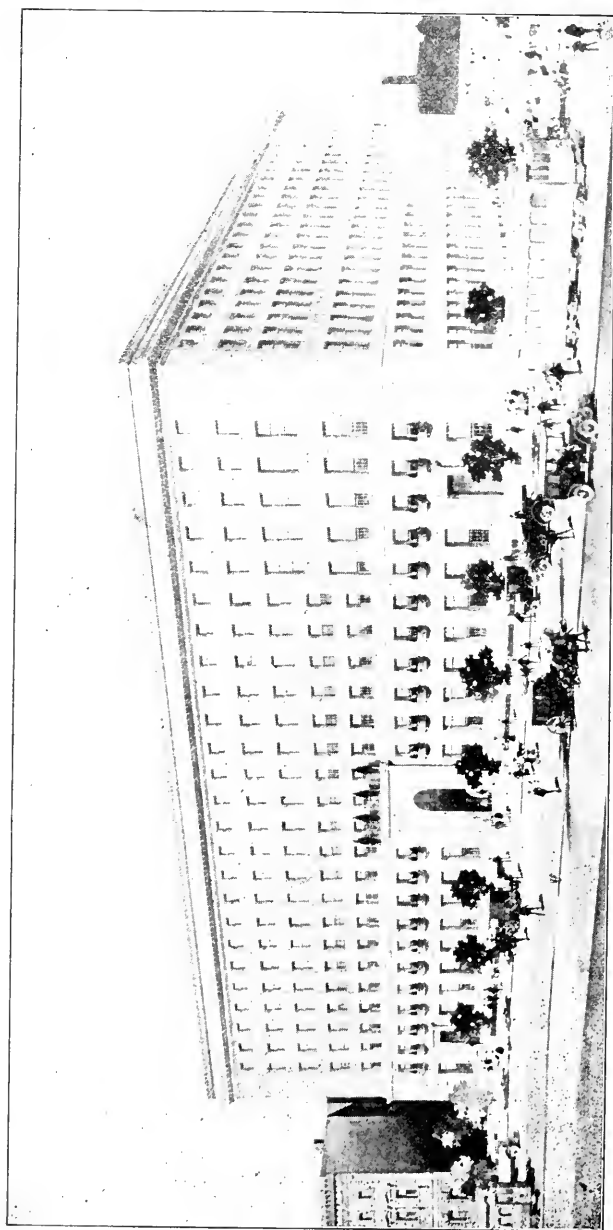
## **NORTHEASTERN UNIVERSITY**

316 Huntington Avenue, Boston, Massachusetts  
or nearest division or branch

# NORTHEASTERN PREPARATORY SCHOOL

The evening school which  
enables young men who are  
employed to obtain a stand-  
ard high school education.

Northeastern Preparatory School is a part of  
Northeastern University of the Boston  
Y. M. C. A. and is located in Boston. Divisions  
are conducted at Worcester, New Haven, and  
Providence



ASSOCIATION BUILDING



## CALENDAR

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### Fall Term—1922-23

September 18-22	Registration
September 26	Opening of Term
October 12	Columbus Day
November 30	Thanksgiving Day
December 25-30	Christmas Recess
January 16-19	Examinations
January 19	Close of Term

### Spring Term—1923

January 22-26	Registration
January 30	Opening of Term
February 22	Washington's Birthday
March 20	Annual Banquet
April 19	Patriot's Day
May 15-18	Examinations
May 18	Close of Term

### Summer Term\*—1923

May 21-25	Registration
May 29	Opening of Term
September 11-14	Examinations
September 14	Close of Term

### Fall Term—1923-24

September 17-21	Registration
September 25	Opening of Term

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\* Not conducted at New Haven.

# NORTHEASTERN PREPARATORY SCHOOL

## BOARD OF GOVERNORS

Albert Harmon Curtis, *Chairman*

Galen David Light, *Secretary*

Wilman Edward Adams                      Arthur Stoddard Johnson

William Converse Chick                      Ernest Lovering

Walton Lee Crocker                      William Everett Macurda

Robert Gray Dodge                      Frank Palmer Speare

Francis Robert Carnegie Steele

## WORCESTER DIVISION

### Educational Committee

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Thomas Earle Babb, Jr.

James Cherry Fuasnaught

George Francis Booth

Ray Woodville Greene, M. D.

Louis Henry Buckley

Robert Lindo Moore

William Henry Burnham

Herbert Parker Lansdale, Jr.

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## NEW HAVEN DIVISION

### Educational Committee

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George Shepard Hawley

Harold Kimball English

George Barnard Wuestefeld

Willard Eldridge Freeland

Clarence Bray Hammond

Kenneth Fletcher Lees

Stuart Watson Finlay

Irville Augustus May

Herbert Groerer

Prof. Stanley William Dudley

Judson Jackson McKim

John Andre Brodhead

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Galen David Light, A. B., *Secretary*

Ira Arthur Flinner, A. M., *Superintendent*

Carl David Smith, B. H., *Regional Director*

## BOSTON

### Local Officers of Administration

Ira Arthur Flinner, A. M., *Superintendent*

Jesse Raymond Derby, A. M., *Principal*

### Staff of Instruction

Laurence Russell Atwood, A. B. (Harvard), Mathematics

Walter Alfred Baldwin, A. B. (Ohio Wesleyan), Physics, Chemistry

William Tilden Bentley, A. B. (Harvard), English

Maurice Sydney Coburne, A. B. (Bowdoin), English

Matthew Richard Copithorne, A. B. (Harvard), English

Cecil Thayer Derry, A. M. (Harvard), Spanish, Latin

George Henry Glasheen, B. B. A. (Boston University), Commercial  
Subjects

Raymond Russell Goehring, LL. B. (Harvard), Mathematics

Fred Harold Kierstead, A. B. (Bates), Economics, Government, History

Carey Prentiss Ladd, A. M. (Harvard), English

Theodore Woods Noon, M. A. (Yale), Latin, History

John William Ogg (Massachusetts Institute of Technology), Mathematics

Fred Parker Hamilton Pike, A. B. (Colby), French

William Jacob Sands, A. M. (Harvard), Head of English Department

Irving Osgood Scott, A. M. (University of Maine), Head of Mathematics  
Department

Edward W. G. Smith, A. B. (Yale), Mechanical Drawing

Zenos Carleton Staples, A. B. (Boston University), Head of Commercial  
Department

Ambrose Benton Warren, A. B. (Colby), Mathematics

Douglas Edwin Wilder, LL. B. (Harvard), Mathematics

Maurine Robb, M. A. (University of Manitoba), Assistant in English

Doris Hunt, *Secretary*

## WORCESTER

### Local Officers of Administration

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Francis Everett Gray, B. A., *Associate Director*  
Willard Hedlund, B. S., *Principal*

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Willard Hedlund, B. S. (Worcester Polytechnic Institute), Mathematics  
Harry Chamberlain Merritt, B. S. (Worcester Polytechnic Institute),  
Mathematics  
Haines Beede Quimby, B. S. (Worcester Polytechnic Institute), Mathe-  
matics, Physics  
Everett Gilman Sherwin, A. M. (Harvard), English  
Andrew Petter Werme, Mechanical Drawing  
Wyman Lester Beal, A. B. (Colby College), Mathematics, Science  
Barbara Law Miner, A. B. (Mount Holyoke), Registrar

## NEW HAVEN

### Local Officers of Administration

John Andre Brodhead, M. E., *Director*

### Staff of Instruction

Everett Allan Chisholm, New Haven High School, Mathematics and  
English  
Edward Jonathan Lang, Mechanical Drawing and Blue Print Reading  
Harry Asher Cheplin, Ph.D. (Yale), Bookkeeping  
Frank Warren Roberts, Ph.B. (Wesleyan), French and Spanish

Complete list of instructors to be announced previously to the opening  
of the first term classes.

## PROVIDENCE

### Local Officers of Administration

Frederic William Ummer, *Director*  
Erwin Braum, *Assistant Director*

List of instructors to be announced previously to the opening of the first  
term classes.

# Northeastern Preparatory School

## HISTORY

Northeastern Preparatory School, formerly called the Evening Preparatory School, was founded in 1897, to meet the demand for instruction by men employed during the day. Since then the School has grown steadily, until today it offers work of the same standard as that maintained by day secondary schools. The school has prepared men for Harvard, Yale, Massachusetts Institute of Technology, Brown, Boston University, Tufts, Dartmouth, Northeastern, and other colleges. Some of these men have obtained their entire preparation here; others have completed preparation begun elsewhere.

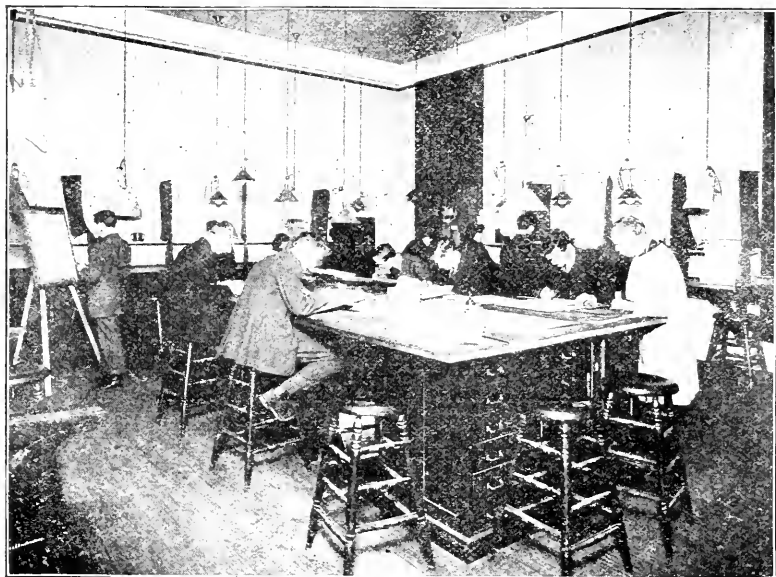
The enrollment has increased from fewer than fifty students, at the beginning, to one thousand. To keep pace with this growth, the School has gradually developed a large and efficient teaching force; to do more thorough and intensive work, it has standardized and carefully outlined the courses of study.

Mere numbers, however, afford no index to the worth of a school. That worth is determined rather by the quality of work the institution performs, and this in turn depends on the character of its teachers and its students. The staff of Northeastern Preparatory School consists of college and university trained men of large teaching experience who know and are in sympathy with the aims and purposes of the students. These latter constitute a body of earnest men who have entered upon their educational work as a part of the business of life, rather than as a social accomplishment, and they come, in the main, from homes in which the habits of industry and economy are habitually fostered. They feel the necessity of increasing their vocational opportunities and usually enter the evening school with definite aims for the future. Practically all the students are engaged in work during the day.

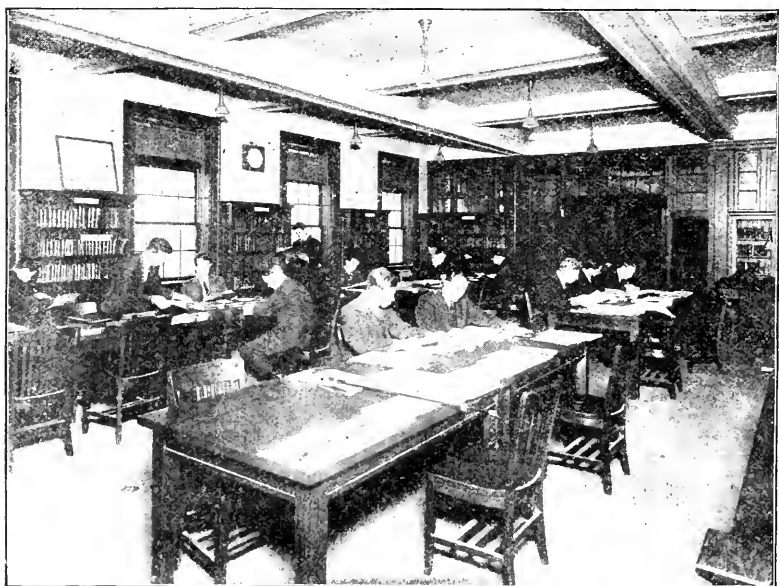
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## **Worcester, New Haven, and Providence Divisions**

The Worcester and New Haven Divisions of this School were established in 1917 and 1920 respectively, and that at Providence in 1922. In these Divisions the courses, requirements, and standards are identical with those in Boston. Students are allowed the same advantages in instruction and credit as the students in the Boston school.



DRAWING ROOM



GENERAL LIBRARY

## AIM

The aim of Northeastern Preparatory School is to prepare young men of intense purpose for colleges, scientific schools, or the advanced schools of Northeastern University, or to help them better their business positions. The subjects offered are those commonly given in the eighth grade of a grammar school and in the four years of a day high school. The amount of school work covered in each subject, during any two terms of sixteen weeks each, is the same as covered in a year of a standard day high school. This is made possible by the detailed and efficient organization of courses, by emphasis upon important points, and also by the earnest attitude of our students.

## EQUIPMENT

The location, surroundings and physical appointments of a school are of primary importance. The location should be healthful, accessible and attractive; buildings should be heated, lighted and ventilated so as to promote the health and progress of students at all seasons of the year.

The buildings occupied by Northeastern Preparatory School fulfill these requirements. Their location on Huntington Avenue, in a section of Boston noted for its institutions of learning, makes them accessible from all parts of the city and suburbs, and free from outside influences which distract the attention. On looking at the buildings from the front, one gains the impression of a single large, square structure, but there are in reality six buildings,—Administration, Assembly, Educational, Natatorium, Gymnasium and Vocational,—each on its own foundation, connected by corridors and bridges. This arrangement gives them all good light and air, and makes for close co-operation among the various units.

The equipment of the classrooms is excellent. The rooms are high-studded, airy, well lighted and ventilated, and comfortable in temperature both summer and winter. They have slate blackboards, roomy seats, individual desks, and wall tints that are restful to the eyes. The School is adequately supplied with maps and charts.

The laboratory equipment is thoroughly modern and is extensive enough to furnish material for many students working at the same time. There are three chemical laboratories and one physics laboratory. The mechanical drawing room is unusually large and has every convenience for work of all grades.

## ADMISSION

Any young man of good moral character, regardless of occupation or creed, who has completed at least six grades of a grammar school course, or the equivalent, may enroll in the School.

Courses adapted to the needs and education of such applicants are offered each term. It is not advisable, however, for one younger than fifteen years of age to register, for the courses are adapted to those who are more mature, and are physically able to work during the day and to study at night.

## REQUIREMENTS FOR GRADUATION

Students may graduate from any of the courses offered in Northeastern Preparatory School when they have completed fifteen units of work, including three of English. A unit of work, as counted by the College Entrance Examination Board, is the amount covered in a single standard subject during a year's work in a standard day high school, the equivalent of which is covered by this School in two terms of sixteen weeks each.

The courses described below form the entire offering of the School. Most of these are scheduled every term; a few in alternate terms or every third term. An announcement is made in advance of each registration period of the courses for the following term, together with the days and hours when each class will meet. Any secondary school subject, however, will be offered if six or more men wish to take it, even if it does not appear in the announcements or in this catalogue.



# Suggested Courses of Study

## CLASSICAL COURSE

Candidates for Harvard and for classical courses in other colleges should select the following:

### Required Units

English .....	3*	Algebra .....	1½
Latin .....	3	Plane Geometry .....	1
Modern Language .....	2	Science .....	1

### Elective Units

French .....	3	Physics .....	1
German .....	3	Chemistry .....	1
History .....	2	Solid Geometry .....	½

(A total of 15 units is required for Harvard)

## SCIENTIFIC COURSE

Candidates for the Massachusetts Institute of Technology and other scientific and technical schools should select the following:

### Required Units

English .....	3*	Solid Geometry .....	½
French or German .....	3	Trigonometry .....	½
History .....	1	Physics .....	1
Algebra .....	1½	Chemistry .....	1
Plane Geometry .....	1		

### Elective Units

Elementary French .....	2	Mechanical Drawing .....	1
Advanced French .....	1	Latin .....	2
Elementary German .....	2	Biology .....	1
Advanced German .....	1	History (additional) .....	1
Spanish .....	2		

(A total of 13½ units is required for the Massachusetts Institute of Technology)

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\*Four courses in English are regularly computed as *three* units for college entrance.

## GENERAL PREPARATORY COURSE

The number of units required for admission and also the freedom of choice vary with the several colleges. The principal will be glad to advise students regarding their selection. The following is suggested as typical:

### Required Units

English . . . . .	3*	Science . . . . .	1
Foreign Language . . . . .	2	Algebra . . . . .	1 or 1½
History . . . . .	1	Geometry, Plane . . . . .	1

### Elective Units

Ancient History . . . . .	1	Physical Geography . . . . .	½
Biology . . . . .	1	Italian . . . . .	2
Bookkeeping . . . . .	1	Latin . . . . .	2 to 4
Chemistry . . . . .	1	Mechanical Drawing . . . . .	1
Commercial Arithmetic . . . . .	½	Physics . . . . .	1
Commercial Geography . . . . .	½	Physiology . . . . .	½
Economics . . . . .	½ or 1	Solid Geometry . . . . .	½
European History . . . . .	1	Spanish . . . . .	2 or 3
French . . . . .	2 or 3	Trigonometry . . . . .	½
German . . . . .	2 or 3	United States History . . . . .	1
Government . . . . .	½ or 1		

(A total of 15 units is the usual requirement)

## NORTHEASTERN UNIVERSITY SCHOOL OF COMMERCE AND FINANCE

### Required Units

English . . . . .	3†	Economics . . . . .	1
Commercial Arithmetic . . . . .	½	Government . . . . .	1
Algebra . . . . .	1	United States History . . . . .	1
Plane Geometry . . . . .	1		

### Elective Units

Algebra . . . . .	½	Physical Geography . . . . .	½
Ancient History . . . . .	1	Italian . . . . .	2
Biology . . . . .	1	Latin . . . . .	2 to 4
Bookkeeping . . . . .	1	Mechanical Drawing . . . . .	1
Chemistry . . . . .	1	Physics . . . . .	1
Commercial Geography . . . . .	½	Physiology . . . . .	½
Commercial Law . . . . .	½	Russian . . . . .	2
English . . . . .	1	Solid Geometry . . . . .	½
European History . . . . .	1	Spanish . . . . .	2 or 3
French . . . . .	2 or 3	Trigonometry . . . . .	½
German . . . . .	2 or 3		

(A total of 15 units is required)

\*Four courses in English are regularly computed as *three* units for college entrance.

†Three units of credit allowed for three courses, a fourth may be offered as an elective.

## SCHOOL OF LAW

### Required Units

English .....	2
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### Recommended Units

English (additional) ..	1 or 2	History ..	1 to 3
Economics .....	$\frac{1}{2}$ or 1	Latin ..	1 or 2
Government .....	$\frac{1}{2}$ or 1		

### Elective Units

See the General Preparatory Course.

(A total of 15 units is required)

## SCHOOL OF ENGINEERING

### Required Units

Algebra .....	$1\frac{1}{2}$	History .....	1
Plane Geometry .....	1	Science .....	1
English .....	3*		

### Elective Units

Commercial Arithmetic ..	$\frac{1}{2}$	English History .....	$\frac{1}{2}$
Ancient History .....	1	French .....	3
Biology .....	1	German .....	3
Bookkeeping .....	1	Italian .....	2
Chemistry .....	1	Latin .....	3
Advanced Composition ..	$\frac{1}{2}$	Mechanical Drawing ..	1
Commercial Geography ..	$\frac{1}{2}$	Physics .....	1
Economics .....	$\frac{1}{2}$ or 1	Physical Geography ..	$\frac{1}{2}$
Physiology .....	$\frac{1}{2}$	Spanish .....	3
Public Speaking .....	$\frac{1}{2}$	Trigonometry .....	$\frac{1}{2}$
Russian .....	2	Typewriting (40 words a	$\frac{1}{2}$
Shorthand (100 words a	$\frac{1}{2}$	minute) .....	$\frac{1}{2}$
		United States History ..	1

(A total of 15 units is required)

## EVENING POLYTECHNIC SCHOOL

### (In Worcester, EVENING SCHOOL OF APPLIED SCIENCE)

Candidates for this school are advised to complete the high school course, including in it English, Algebra, Geometry, Science, and Drafting.

Men of suitable age and experience, however, will be admitted with the following:

### Required Units

English .....	2	Algebra .....	$1\frac{1}{2}$
Plane Geometry .....	1		
Mechanical Drawing ..	1	Total .....	$5\frac{1}{2}$

---

\*Four courses in English are regularly computed as *three* units for college entrance.

## Subjects of Instruction

*Note:* The courses of the school are arranged in "units."

A unit is ordinarily the amount of work covered in a single subject taken four or five times a week for a year in a standard day high school.

In this school a unit may be covered in each subject in two terms of sixteen weeks each. For instance, English 1a and English 1b, each being a term's work, constitute a unit in English. Each is equivalent to a half-year's work in high school English.

Students carry one, two, or sometimes three subjects at a time. Fifteen units, properly selected (see pages 11-13), are required for graduation.

### ENGLISH

The English courses are especially planned to develop broad, sound habits of thought, alert intelligence, and direct and clear expression. The instruction in literature and composition is conducted according to college methods adapted to preparatory school standards; the lecture system is employed in preference to recitation; and the mature mind accordingly finds ample material for thoughtful and progressive effort.

Among the chief topics treated are the practical elements of composition and rhetoric, the nature of style, the origin and development of the chief literary forms, and the appreciation of English classics. Fundamental principles of thought and expression are emphasized throughout the course; thoroughness is insisted on. Pedantic technicalities are avoided; enthusiasm, understanding, and persistence are fostered.

**ENGLISH Aa, Ab.**—This course is for those who need drill in elementary spelling, punctuation, grammar, letter-writing, and oral reading. The aim is to prepare the student for the first-year course in high school.

**ENGLISH 1a, 1b.**—This course is introductory to the essentials of composition, and emphasizes the practical problems in grammar, sentence structure, and clear expression. Prose classics are read both to give training in thoughtful and appreciative reading and to serve as models for the composition work. Much attention is paid to spelling.

**ENGLISH 2a, 2b.**—This is designed to aid the student in the study and appreciation of literature in its relation to other literary, or historical, events. Course 2a deals chronologically with British literature. Course 2b takes up the literary masterpieces written by Americans. Much attention is paid to the best expressions of contemporary thought.

**ENGLISH 3a, 3b.**—This is a course in advanced composition, the purpose of which is to enable the student to express him-

self effectively. It insists upon clear, forceful presentation, accurate and coherent thinking, and the careful study of stimulating models. The principles of punctuation, grammar, and letter-writing are briefly reviewed. This course may follow 1ab.

ENGLISH 3k.—This is a special course in the writing of business letters and reports. It may follow 3a in place of 3b.

ENGLISH 3p.—This is a special course in technical English for men engaged, or about to engage, in technical work. It may follow 3a in place of 3b.

ENGLISH 4a, 4b.—The purpose of this course is to aid the student in the acquiring of that appreciation of the masterpieces of literature which the college entrance examinations demand. This work is supplemented by lectures and carefully revised written reports.

ENGLISH 4g.—This is a course in general literature, intended to develop the ability to read with pleasure and profit, and also to select reading intelligently. Some time is devoted to the discussion of the best literature being published today. This course may be taken in two consecutive terms. It is open to students who have completed English 1ab and 2ab.

ENGLISH FOR FOREIGNERS (ENGLISH F).—This is a practice course in speaking, reading, and writing, designed for foreign-born men of education who already possess some knowledge of English but who wish for greater proficiency and accuracy.

## LATIN

The courses in Latin are such as to fulfill the requirements of college entrance examinations. In the first year, they aim to give a foundation in grammar which will make possible and profitable the study of Latin texts in the other years.

LATIN 1a, 1b.—This course embraces the elementary grammar, with easy translations and drill on inflections.

LATIN 2a, 2b.—Course 2 requires translations from Caesar, with frequent assignments in Latin composition. The latter involves a review of constructions and forms, and application of the rules of syntax.

**LATIN 3a, 3b.**—Cicero's orations against Cataline, for the Manilian Law, and for Archias are read. Grammar review and Latin composition also are included.

**LATIN 4a, 4b.**—This course requires translations from Virgil's "Aeneid," and advanced Latin composition.

## **FRENCH**

The courses in French are planned with the purpose of giving to students (1) an appreciative comprehension of French, both as literature and as a spoken language; and (2) a sufficient knowledge to fit them for advanced work in higher schools. The essentials of the grammar are mastered by continued drill and constant application. The attainment of good pronunciation receives careful attention, and from the beginning the ear of the student is trained to understand spoken French.

**FRENCH 1a, 1b.**—The "New Chardenal French Grammar" is used, with selected readings. Emphasis is placed on pronunciation and the acquiring of a vocabulary.

**FRENCH 2a, 2b.**—This course continues the study of the "New Chardenal French Grammar." Special composition work and selected readings also are required. Students who complete both French 1 and 2 are prepared to take college entrance examinations in Elementary French.

**FRENCH 3a, 3b.**—The "New Chardenal French Grammar" is reviewed. Lamartine's "Révolution Française" and selections from Maupassant, Th. de Banville, Méilhac et Halévy, and others are read. Koren's "French Composition" affords practice in English-French translation.

**FRENCH 4a, 4b.**—This course embraces classic plays, and selections from Balzac and others; Victor Hugo's "Hernani"; Rostand's "Cyrano de Bergerac"; and critical essays on France, its people and its literature.

## **ITALIAN**

**ITALIAN 1a, 1b.**—This is an elementary course, with drill in pronunciation, conversation based on the text, and readings from Bowen and Fogazzaro. Sauer's "Conversation Grammar" is used.

## **SPANISH**

**SPANISH 1a, 1b.**—This elementary course covers the grammar, with correct pronunciation, ear-training, and conversation.

SPANISH 2a, 2b.—The study of grammar, and practice in conversation and composition are required.

SPANISH 3a, 3b.—This is a commercial course entirely. It embraces reading, writing, translating and conversing on commercial subjects; and commercial correspondence, business terms, and South American customs. A forceful and easy style of expression is cultivated. The books used are Monsanto and Languellier's "Grammar," "A Trip to South America," and "Spanish Daily Life."

SPANISH 4a, 4b.—This is an advanced commercial course. "Grammatica Practica"; "Castellana"; Harrison's "Spanish Correspondence and Commercial Reader"; "Selections from Don Quixote"; and "Spanish Literature," are the texts required.

## GERMAN

The aim of the first year is to enable the student to acquire a correct pronunciation, to gain a complete mastery of fundamental grammatical forms and principles, and to get a vocabulary that will make it possible to read simple German texts intelligently.

In the second year the inflected forms and the principles of German grammar are thoroughly reviewed, the working vocabulary is constantly enlarged, and exercises, both in composition and conversation, are continued.

GERMAN 1a, 1b.—Voss' "Essentials of German," and Guerber's "Märchen und Erzählungen" are used. Emphasis is placed on pronunciation and the acquiring of a vocabulary.

GERMAN 2a, 2b.—The study of grammar is continued. Special attention is given to syntax, and selected readings are required. Students who complete German 1 and 2 are prepared to take college entrance examinations in Elementary German.

GERMAN 3a, 3b.—This course embraces Becker's "Deutsch für Ausländer"; Wildenbruch's "Das edle Blut"; Baumbach's "Die Nonna"; von Lilencron's "Anno 1870"; Keller's "Kleider machen Leute"; Heine's "Die Harzreise"; Meyer's "Das Amulett"; and German composition.

GERMAN 4a, 4b.—Schiller's "Wilhelm Tell" or "Die Jungfrau von Orleans"; Lessing's "Minna von Barnhelm"; Goethe's "Egmont" and "Bernmann und Dorothea;" and critical essays on Germany, its people and its literature, are read.

## HISTORY, GOVERNMENT, ECONOMICS

The aim of the department is to give a broad knowledge of vital conditions in the growth of the leading countries of the world. This includes the study, not only of important historical facts, but more especially of the processes of development in government, society, business, religion, and education. The past is studied that the present may be better understood.

**HISTORY A.**—This is an elementary course in United States History primarily for those students who have never studied the subject. Its aim is to prepare for History 2 or its equivalent.

**HISTORY 2a, 2b.**—A careful and comprehensive study is made of United States History, including not only the story of earlier times but also an analysis of events from the Civil War down to and including our own times. Special reference is made to the constitutional, political and economic development of the Nation.

**HISTORY 3a, 3b.**—This is a course in European History, embodying a comprehensive survey of mediaeval and modern Europe, including England. A study is made of the development of the great races of to-day, particularly the Anglo-Saxon, Latin, Teutonic, and Slavonic, and the tendencies that resulted in the World War.

**HISTORY 4a, 4b.**—This is a course in Ancient History. The first division is devoted to the history of Greece; the second, to that of Rome. The course emphasizes the characteristic elements of these civilizations and the contributions which they made to modern civilization.

**GOVERNMENT 1a.**—The forms of our local and state governments are taken up first. These are followed by a careful analysis of the Constitution of the United States, showing the relationship of the executive, legislative, and judicial branches of our National Government.

**GOVERNMENT 1b.**—This course begins with a study of the form and operation of the principal European governments. Comparison is later made between these governments and that of the United States.

**ECONOMICS 1a, 1b.**—This course comprises the outline of trade development as contained in economic history; and also a study of economic theory, including prices, values, money, banking and exchange, credit, international trade, transportation, labor and capital, public ownership, wages and profits, and kindred subjects. The field of public finance is also covered briefly, but thoroughly.



## MATHEMATICS

The purpose of the courses is two-fold: (1) to make the student acquainted with such mathematical methods as are most likely to be useful in the study of other subjects and particularly in practical affairs; and (2) to give him a thorough training in such fundamental branches as shall furnish a sufficient basis for advanced mathematical studies.

**ARITHMETIC A.**—This is an elementary course on the four fundamental operations, factors, and simplex processes, in preparation for Arithmetic 1a.

**ARITHMETIC 1a.**—For a description, see Commercial Subjects.

**ALGEBRA 1a, 1b.**—The essential operations of algebra to quadratics are covered. The emphasis is on the fundamental principles.

**ALGEBRA 2a.**—This course completes the college entrance requirements. It is designed for students who have acquired the fundamental principles.

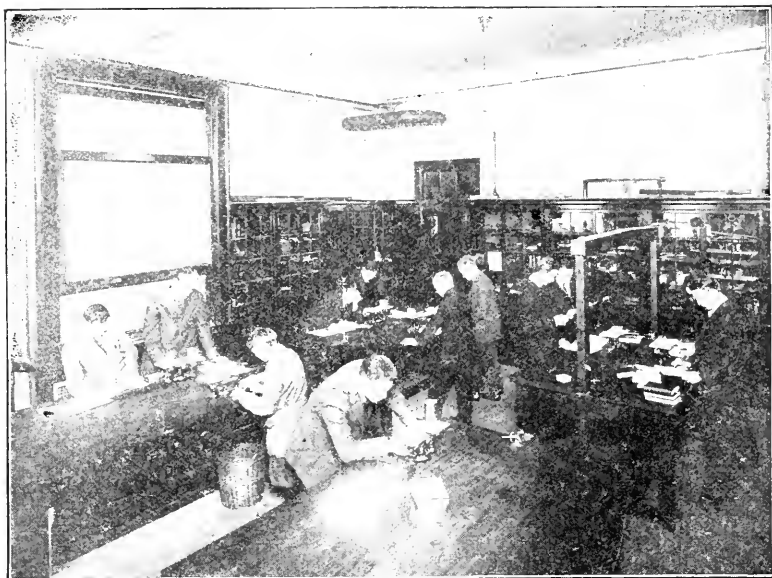
**GEOMETRY 1a, 1b.**—The five books of Plane Geometry are studied. The numerous original exercises stimulate the power to reason clearly and to derive logical proofs. Special attention is given to those who expect to take college entrance examinations.

**GEOMETRY 2a.**—This course comprises the standard theorems in solid and spherical geometry. Stress is laid upon numerical exercises involving mensuration of solid figures. The work is designed primarily for those who are preparing for college.

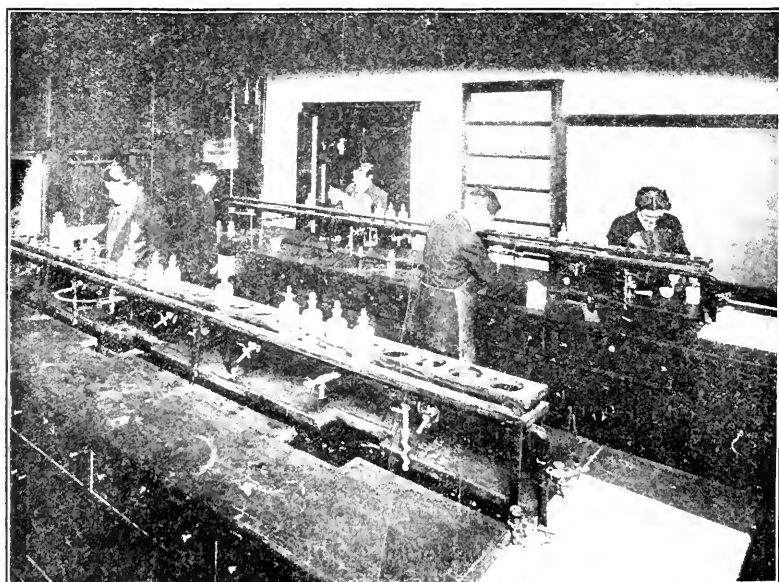
**TRIGONOMETRY 1a.**—This course is intended for those who wish to offer trigonometry for college entrance, or for those who intend to take up engineering.

## DRAWING

**MECHANICAL DRAWING 1a, 1b.**—The fundamentals, such as lettering, geometrical problems, orthographic projections, and development and intersection of surfaces, are covered. Much attention is given to the proper use of the various drawing instruments. A credit toward college entrance will be granted upon the completion of plates 1 to 41, inclusive, and plates 43, 49, 51, and 53, in Sampson's "Mechanical Drawing and Practical Drafting." All the work is individual and admits of progress according to the student's ability.



PHYSICS LABORATORY



CHEMISTRY LABORATORY

## SCIENCE

**PHYSICS 1a, 1b.**—This course offers an introduction to the general subject. Mechanics, heat, magnetism and electricity, sound, and light are taken up. The course aims to encourage in the student a habit of observation, and to develop his ability to think intelligently about simple physical facts, many of which are observable in everyday life. It meets college entrance requirements.

**CHEMISTRY 1a, 1b.**—The general purpose of this course is similar to that of Physics 1. The work is divided between lecture-room discussion and demonstration of the fundamental principles and facts of inorganic chemistry, on the one hand; and, on the other, experimental work in the laboratory by the students individually. This latter is closely supervised, and the student is required to do his work neatly, observe results carefully, and endeavor to reason from these results to legitimate conclusions. He must also keep systematic records of this work, as directed. At least forty-five experiments are performed.

**BIOLOGY 1a, 1b.**—This course comprises the structure of animals and plants, the functions of organs, the development of organisms, and classifications. It includes an outline of the more important biological theories, such as evolution, natural selection, variation, mutation and heredity, and the principles upon which modern hygiene and sanitation are based. Laboratory work is required.

**PHYSIOLOGY AND HYGIENE 1a.**—The course includes a study of the structure, the various systems and organs of the body, and the observance of the laws of health.

**PHYSICAL GEOGRAPHY 1a.**—This course yields a large amount of practical geographical information bearing directly on the physical conditions that affect customs, occupations, and food distribution of the world.

**COMMERCIAL GEOGRAPHY 1a.**—A study is made of the various countries in relation to their commercial intercourse. The student is familiarized with the principal waterways, cities, products, imports, exports, etc.

## COMMERCIAL SUBJECTS

**ARITHMETIC 1a.**—The aim of the course is to secure a combination of speed and accuracy in the essential arithmetical calculations used in business. A thorough review of elementary principles is given, followed by a detailed study

of fractions, decimals, aliquot parts, percentage, interest, bank discount, commission, pay rolls, insurance, brokerage, taxes, estimating grain and lumber supplies, and other practical phases.

**BOOKKEEPING 1a.**—This is a course intended to train the student in the art of properly recording the simpler transactions of business according to the elementary principles of accountancy. The books used are the cash book, the purchases book, the sales book, the journal, and the ledger. After the first month the check book and bank book are introduced. The trading and profit and loss statements and statements of resources and liabilities are made as simple as possible and instructions are given with great fullness and detail.

**BOOKKEEPING 1b.**—This course trains the student to keep a set of books illustrating a wholesale business. At the beginning the firm consists of two persons; later additional partners are admitted. The business of a wholesale grocery house is represented, but the methods and practices set forth will apply to a wholesale or jobbing business in almost any other line, such as dry goods, notions, clothing, boots and shoes, hats and caps, men's furnishings, millinery, etc. The purpose of the course is to qualify the student thoroughly to keep any set of commercial accounts.

**COMMERCIAL LAW 1a.**—A course in the elements of business law, covering such subjects as contracts, agency, sales, bailment, negotiable instruments, partnerships and corporations. The intent of the course is only to help one to keep out of pitfalls, and to know when professional services are necessary.

**PENMANSHIP.**—Exercises in plain business writing are required. Legibility and rapidity are emphasized throughout the course.

**SHORTHAND 1a, 1b.**—This course aims to give the student a mastery of the fundamental principles and the ability to transcribe approximately sixty words a minute. This attainment requires two terms of concentrated effort, and much outside practice.

**SHORTHAND 2a.**—A quick review of principles is given, followed by dictation of business correspondence and general matter. A certificate is granted when the pupil acquires a speed of ninety or more words per minute, and ability to transcribe notes on the typewriter at the rate of at least twenty-five words per minute.

**TYPEWRITING.**—The “Touch” method is taught. This means a definite number of keys allotted to each finger, and all work done without watching the keys. To receive credit for the course, a speed of forty words a minute is required.

### **NOTE**

The courses described in the foregoing form the entire curriculum of the School. Most of these courses are offered every term; a few in alternate terms or every third term. An announcement is made in advance of each registration period of the courses scheduled for the following term, together with the day and hour at which each class will meet. Any secondary school subject, however, will be offered if six or more men register for it, even if it is not listed on the announcement or in this catalogue.

## GENERAL INFORMATION

### School Year

The school year is divided into three terms of sixteen weeks each. The fall term includes the period from September to January, the spring term from January to May, and the summer term from May to September.

The work is so conducted that in any two terms the student may complete a full year of high school work in any subject. By attending full calendar years, a four-year high school course can be completed in from three to five years, according to the number of subjects carried by the student.

Beginning classes are offered each term in a variety of subjects. It is possible for a student to enter the School at the beginning of any term, and to select courses suited to his individual advancement. Several half courses are also offered each term.

### Sessions

The school sessions are held on week-day evenings, excepting Saturday, from 7 to 10 o'clock. A student's schedule may include 1, 2, or 3 evenings a week, depending on his selection. *As a rule, subjects are scheduled for two evenings a week.* It has been found that because the students are mature, and in earnest, they can do the work of a course in fewer recitation periods than customary in a day high school; therefore, classroom work is concentrated and intensive. It must be remembered, however, that the major part of the work is done outside the classroom.

### Examinations

Examinations are held in all subjects at the close of each term. If a student pursues a course part of the term and then drops it, no record of his standing in that course is kept at the office. Students are advised, therefore, to pursue courses in full and take all examinations, since later, for college entrance or for business, they may need an official rating. While the scholarship of students is determined largely by means of examinations, yet regularity of attendance and faithful performance of required work are considered essential.

Term examinations are modeled after college examinations. Attendance upon at least 75 per cent of the classes is required for admission to the examinations.

The passing mark is D—(60 per cent).

## **Vocational and Educational Guidance**

It is the intent of the School to advise carefully all its students, so that the subjects selected for study shall be of most benefit to the student, in relation to his ultimate vocational aim, or to his more immediate educational purpose. The School realizes that some men come to it to get help in bettering their business positions, others to broaden their general education, and still others to be directed to a college or technical school. To each is given advice which will best meet his educational need.

### **Credit from Other Schools**

Students who have begun their high school work in other approved institutions may obtain credit for that work toward the diploma of this school by presenting a certified transcript of record from the school previously attended.

### **Admission to College**

A few colleges will admit students on the diploma from this school. A large number of colleges will accept a special certificate from this school. A few colleges (notably Harvard, Yale, and the Massachusetts Institute of Technology) require certain examinations from all candidates, and this school prepares for those examinations.

To obtain a certificate, a grade of 80 per cent is required in each subject.

### **Special Students**

Some of our students do not expect to enter higher institutions of learning. To these the School offers special combinations of subjects which will benefit them in the work in which they are engaged during the day.

### **Special Summer Courses**

Several intensive courses carrying a full unit credit each are given each summer in Boston and Worcester, particularly for the benefit of students in college or preparing for college who have admission requirements to work off.

### **Scholarships**

As an aid to worthy men who desire an education and are unable to pay in full even our slight charges, a limited number of scholarships has been provided, which will be judiciously distributed. Application should be made to the principal of the school.

In addition to these scholarships there are others in the schools of Northeastern University available for graduates of

Northeastern Preparatory School. Each year a few graduates are granted free tuition for one year in the Law School, the School of Commerce and Finance, the Evening Polytechnic School (in Worcester, Evening School of Applied Science) or the School of Engineering. The value of these scholarships varies from \$50.00 to \$125.00. These are awarded to graduates who have pursued, in this school, ten of the fifteen units required for graduation, and have maintained a ranking of at least five A's and five B's. A further condition is that the student must enter the advanced school free of conditions.

### **Text Books**

Students buy their own books and printed outlines of courses. The book store keeps on hand all books and supplies used in the school. These are sold at a trifle above the wholesale price.

### **Libraries**

The school has excellent facilities for study in the library and reading room of the Association, which is equipped with dictionaries, encyclopaedias, and special texts for carrying on the work of the school effectively.

### **Tutoring**

The school office is in touch with capable teachers who will give individual instruction to men who desire private lessons either for rapid emergency work or in any courses which are not on our schedule. Arrangements are made through the office.

### **School Gatherings**

Each month the students of the school meet in a general assembly. Opportunity is given to hear an address by some business or professional man and to meet other members of the school. The annual banquet is held in March.

### **Student's Tickets**

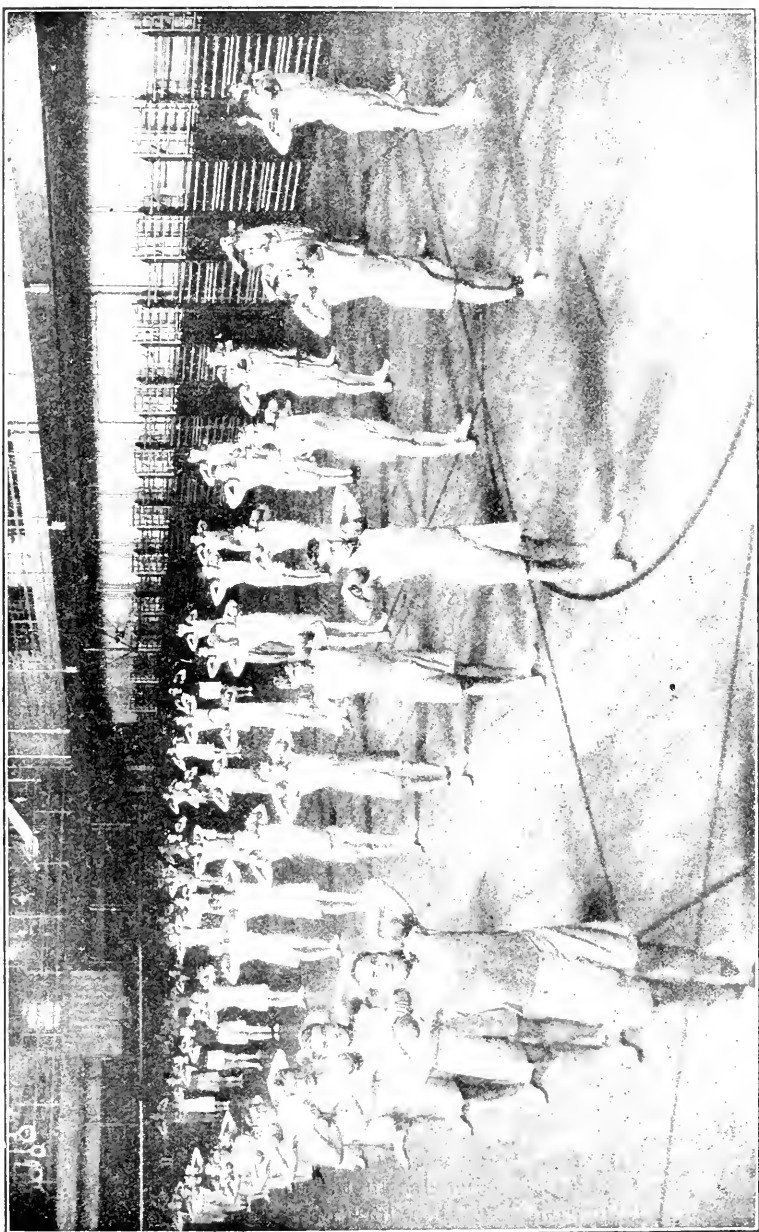
Half-fare tickets on the Boston Elevated Railroad may be obtained on applications issued at the school office.

The railroad systems entering Boston issue student's tickets to men under twenty-one years of age. Applications for these may be obtained at a railroad office and signed at the school office. Worcester students also are granted this privilege.

### **Dormitory Rooms**

In Boston students from a distance may secure rooms in the building. Excellent table board can be had also. The charge for rooms ranges from \$2.75 to \$5.00 a week; good





GYNASIUM

table board from \$6.00 a week up. The rooms and dining facilities are under the direct management of the Boston Y. M. C. A. Students who room in the building are subject to the regulations of the Association.

In Worcester, New Haven, and Providence, dormitory rooms are available.

### **Gymnasium**

Students in the Northeastern Preparatory School may secure privileges in the Department of Recreation and Health at a small price per year, in addition to the annual membership fee. There are also special rates for men who wish the use of the pool and showers during the summer months only. Particulars may be obtained at the office.

### **Membership**

All educational work is conducted as part of the larger activities of the Young Men's Christian Association. The annual membership dues are paid by all students. This membership entitles the holder to enjoy many features of the Association's extensive work, including privileges in branches of the Y. M. C. A. in other American cities, subject to local regulations.

### **Tuition Rates**

The rates are made for each subject, for a single term only, so that students are charged exactly in proportion to the instruction. A discount of 10 per cent on all tuition rates is given when the fee is paid in full on enrollment.

Each Standard Academic Course, meeting two hours per week, \$12.50.

For rates for Shorthand, Typewriting, and special full-unit courses, apply at the office.

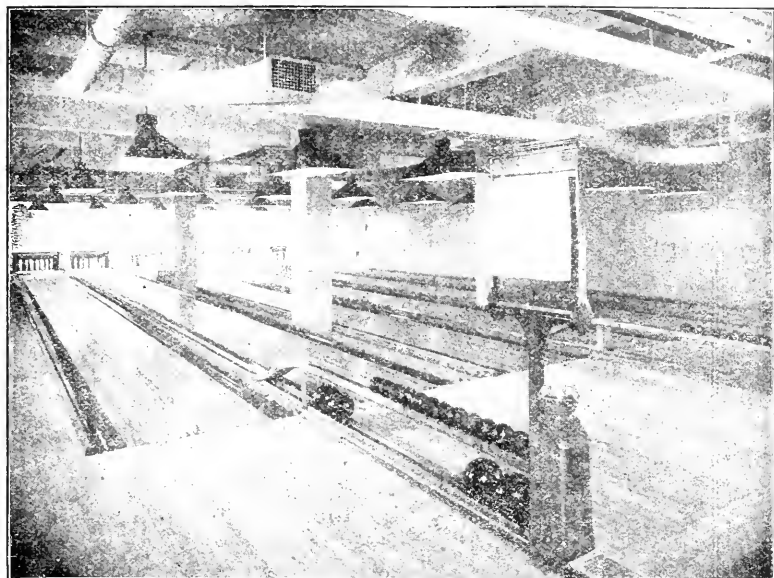
The foregoing rates are in addition to the Y. M. C. A. annual membership dues.

The Laboratory fee for Chemistry or Physics is \$5.00 for the course. A deposit of \$5.00 also is required for Chemistry to cover breakage, the unused portion to be returned at the close of the course.

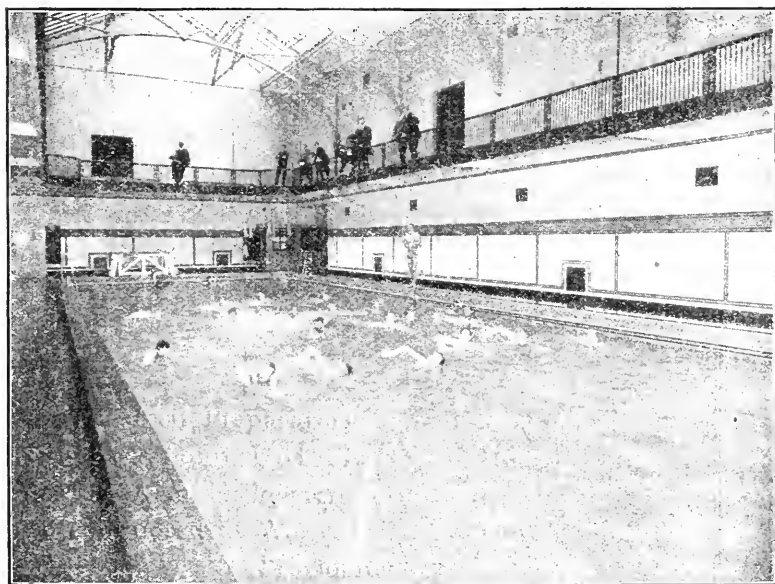
The first half of tuition is due on entrance. The second half is due November 15, March 15, or July 15, according to school term.

### **Refunds**

Since the School assumes the obligation of carrying the student throughout the term for which he registers, and



BOWLING ALLEY



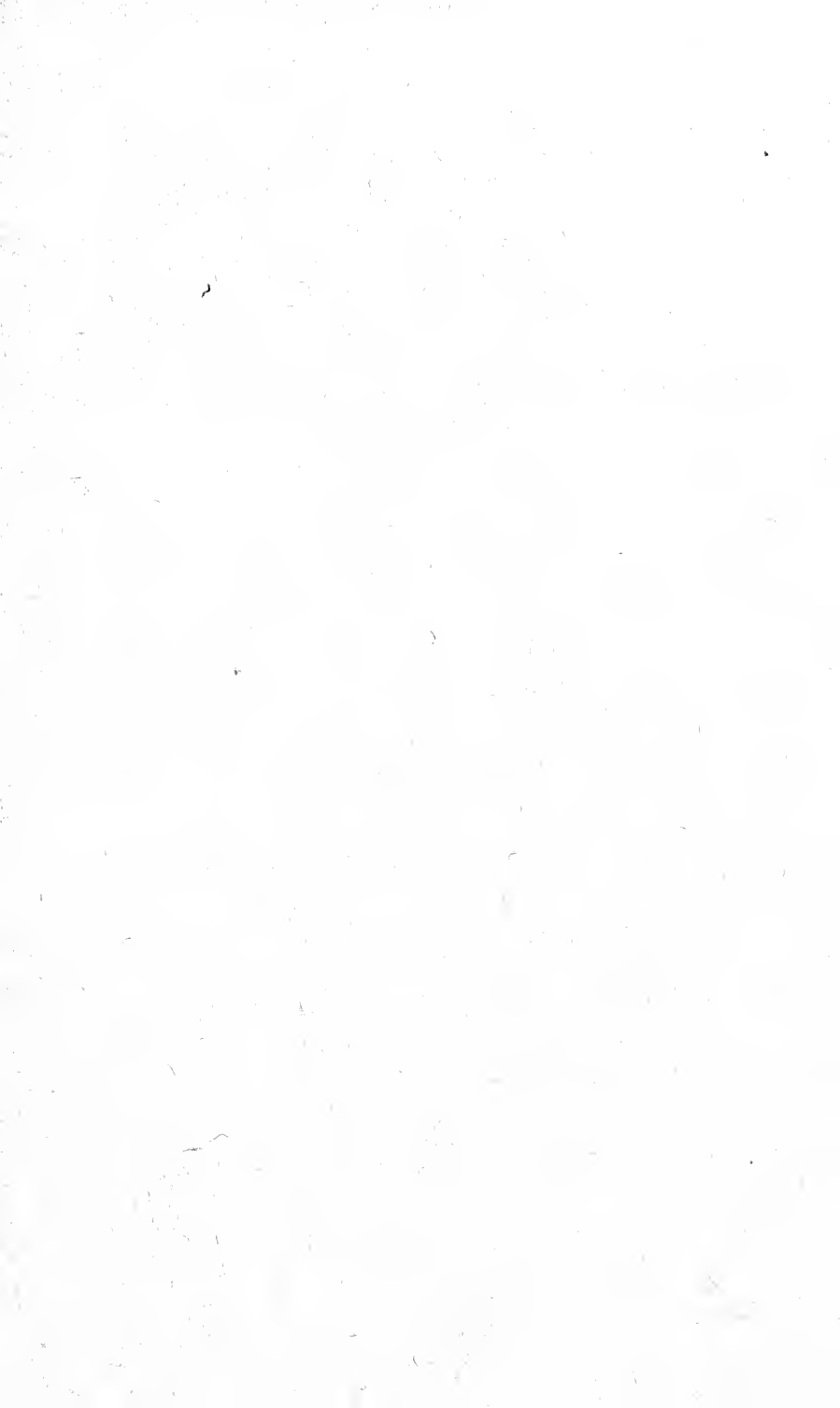
SWIMMING POOL

since the School provides the instruction and accommodations on a term basis, the Committee on Refunds has ruled as follows:

- A. Applications for credits or refunds must be presented within thirty days after withdrawal from School.
- B. Credits or refunds may be authorized solely as stated below:
  - 1. Cash refunds may be granted only in cases where students are compelled to withdraw on account of personal illness. The application must be accompanied by a satisfactory certificate from a physician.
  - 2. The unused portion of the tuition paid by the applicant may be placed in suspense and used at some future time by the applicant to apply upon tuition in any school in Northeastern University, provided it is used within two years. This action is taken provided the reasons as set forth in the application meet with the approval of the Committee on Refunds.











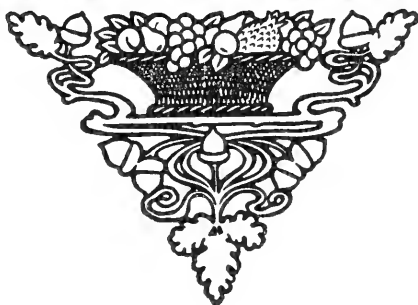
# *Automotive School*

**CATALOG 1922-1923**

**TWENTIETH YEAR**

**OLDEST SCHOOL OF ITS KIND IN AMERICA**

---



**Affiliated with**

**NORTHEASTERN UNIVERSITY**

**of Boston Young Men's Christian Association**

**316 Huntington Avenue, Boston, Mass.**

# **NORTHEASTERN UNIVERSITY AND AFFILIATED SCHOOLS**

## **DAY SCHOOLS**

### ***School of Engineering***

Four-year courses in Civil, Mechanical, Electrical, Chemical, and Administrative Engineering, leading to the degrees of Bachelor of Civil, Mechanical, Electrical, and Chemical Engineering. Conducted in co-operation with engineering firms. Students earn while learning. Work conducted at Boston.

### ***School of Business Administration***

Four-year course in Business Administration leading to the degree of Bachelor of Commercial Science. Students may specialize in Industrial Management, Marketing, Finance, and Accounting. A two-year course leading to the Certificate of Proficiency. Work conducted at Boston.

## **EVENING SCHOOLS**

### ***School of Law***

#### ***(Co-Educational)***

Four-year course leading to the degree of Bachelor of Laws. Preparation for Bar Examination and practice. High scholastic standards. A limited number of mature special students admitted each year. Work conducted at Boston, and in Divisions at Worcester, Springfield, and Providence.

### ***School of Commerce and Finance***

#### ***(Co-Educational)***

Four-year courses in Professional Accounting and Business Administration leading to the degrees of Bachelor and Master of Commercial Science. Special two-year courses for those desiring intensive specialization. Work conducted at Boston, and in the Divisions and Branches at Worcester, Springfield, Providence, Bridgeport, New Haven, Lynn, Malden, and Newton.

### ***Evening Polytechnic School***

Three-year courses in Civil, Mechanical, Electrical, Chemical, Structural, Industrial, and Automotive Engineering leading to a diploma. Trains for positions of trust and responsibility. Work conducted at Boston.

### ***Evening Engineering Institute***

Three-year general engineering course, with opportunity for specialization in Mechanical, Civil, or Electrical Engineering, and leading to a diploma. Work conducted in the Divisions at Worcester, Springfield, New Haven and Bridgeport.

### ***Northeastern Preparatory School***

Courses in usual high school subjects leading to a diploma. Three sixteen week terms each year. It is possible for students to meet college-entrance requirements in from three to five years. Work conducted at Boston and in Divisions at Worcester and New Haven.

### ***Vocational Institute***

A diversified program of short intensive courses including all phases of Automotive industry with special instruction for owners, salesmen, mechanics, and chauffeurs.

### ***Department of University Extension***

Home Study courses in co-operation with the United Y. M. C. A. Schools. Classes organized and lectures conducted in cities and towns throughout New England, and in co-operation with leading corporations and business concerns.

For further information concerning any of the above schools

Address

**NORTHEASTERN UNIVERSITY**

316 Huntington Avenue, Boston, Massachusetts

or nearest division or branch.

# AUTOMOTIVE SCHOOL

Catalogue 1922-1923

*Backed by Twenty Years Successful  
Experience and over 20,000  
Graduates*

*Oldest School of its Kind  
in America*

Vocational Institute

Boston Young Men's Christian Association  
316 Huntington Ave., Boston, Mass.

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# CALENDAR

## Owners' Course

*EVENING CLASS* beginning every eight weeks. Tuesday and Thursday, 7 to 9.  
1922 1923

September 12	January 2	April 24
November 7	February 27	June 19

## Operators' Course

*DAY CLASS* beginning every three weeks, 9 to 4. New students may enter any Monday morning. Opening dates as follows:

1922	1923		
September 11	January 15	June 11	October 15
October 2	February 5	July 2	November 5
October 23	March 19	July 23	November 26
November 13	April 9	August 13	December 17
December 4	April 30	September 4	
December 26	May 21	September 24	

*EVENING CLASS* two or three evenings a week, 7 to 9. New students admitted any time.

1922	1923		
September 11	January 10	April 9	
October 9	February 19	May 14	
November 22			

## Ignition Course

*DAY CLASS* beginning every six weeks, 9 to 4.

1922	1923		
September 11	January 15	May 21	September 24
October 23	February 26	July 2	November 5
December 4	April 9	August 13	

*EVENING CLASS* beginning every sixteen weeks, 7 to 9.

1922	1923
September 11	January 10

## Battery Course

*DAY CLASS* beginning every three weeks, 9 to 4. New students admitted any Monday morning.

1922	1923		
September 11	January 15	May 21	September 24
October 2	February 5	June 11	October 15
October 23	February 26	July 2	November 5
November 13	March 19	July 23	November 26
December 4	April 9	August 13	December 17
December 26	April 30	September 4	

## Road Course

Road lessons are given from 9 A. M. to 9 P. M. each day, except Sundays and Holidays, by previous appointments only.

## Repair Course

As this work is largely individual, students may enter any time during the year.

## Welding Course

Day classes starting every two weeks and evening classes starting every eight weeks. First day class September 11. First evening class September 12.

## Holidays

1922 September 4, October 12, November 30, December 25.

1923 January 1, February 22, April 19, May 30, June 17, July 4.

# NORTHEASTERN UNIVERSITY

## Board of Governors

ALBERT HARMON CURTIS, Chairman

GALEN DAVID LIGHT, Secretary

WILMAN EDWARD ADAMS

WILLIAM CONVERSE CHICK

WALTON LEE CROCKER

ROBERT GRAY DODGE

ARTHUR STODDARD JOHNSON

ERNEST LOVERING

WILLIAM EVERETT MACURDA

FRANK PALMER SPEARE

FRANCIS ROBERT CARNEGIE STEELE

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## Officers

FRANK PALMER SPEARE, LL.B., M.H.

President

GALEN DAVID LIGHT, A.B.

General Assistant to the President and Secretary of the College

## The Executive Council

FRANK PALMER SPEARE, LL.B., M.H.

President

GALEN DAVID LIGHT, A.B.

Secretary

CARL STEPHENS ELL, S.B., M.S.

Dean of the School of Engineering and the Evening Polytechnic School

EVERETT AVERY CHURCHILL, A.B., Ed.M.

Assistant to the President and Dean of the School of Law

FRED MILLER, B.S., B.Litt. (Oxon)

Dean of the School of Commerce and Finance

CARL DAVID SMITH, B.H.

Regional Director and Director of University Extension

IRA ARTHUR FLINNER, A.M.

Superintendent of Secondary Schools

FRED COLFAX SMITH, A.B., B.S.

Director Vocational Institute

# AUTOMOTIVE SCHOOL FACULTY

FRED C. SMITH  
Director Vocational Institute

## Operators' Department

HOWARD LEFAYOUR, Principal	JAMES SKINNER	J. TINGLOF
CHARLES L. PIERCE	WM. R. PORTER	E. SMITH
JOHN F. EVERIN	P. H. NORTON	HOWARD LADD

## Road Department

A. B. HAWES, Principal	ARNOLD LEIGHTON	CLAYTON HOWARD
------------------------	-----------------	----------------

## Starting-Lighting Department

E. L. BOSWORTH, Principal	JAMES SKINNER	T. E. MOODY
---------------------------	---------------	-------------

## Battery Department

HARRY DRAKE, Principal

## Repair Department

JOHN H. SALZGEBER, Principal	WM. B. COWEN	J. H. GOODRICH
LESTER DURKEE	JOSEPH COLLINS	GEORGE NORTON

## Auto Painting and Upholstery Department

P. J. WALLACE, Painting	JOHN CONLEY, Upholstery
-------------------------	-------------------------

## Office

ROBERT T. ALMY, JR.

C. L. PIERCE

JAMES SALISBURY

# **HISTORICAL**

## **NORTHEASTERN UNIVERSITY**

### **HISTORICAL SKETCH**

The incorporation of Northeastern University of the Boston Young Men's Christian Association in March, 1916, marked the culmination of a notable development. The University is not a new institution, but a realization of an ideal carefully worked out and persistently followed for a period of many years. The Boston Young Men's Christian Association, established in 1851, had as one of its first lines of endeavor, evening classes for young men.

It was not, however, until 1896 that the evening school system was placed upon a permanent basis with expert supervision. As courses were being offered in increasingly large numbers, it became evident that a more complete organization should be effected, with the result that the courses were grouped as separate schools, such additional courses being offered as would complete the curricula of the several schools.

The School of Law, established 1898, was incorporated in 1904, with degree granting power. The School of Commerce and Finance, founded in 1907, was incorporated in 1911, and was given the right by the State to grant the Bachelor and Master of Commercial Science degrees. The School of Engineering was opened in 1909, and received in 1920 the right to grant the following degrees: Bachelor of Chemical Engineering, Bachelor of Mechanical Engineering, Bachelor of Electrical Engineering, and Bachelor of Civil Engineering. Affiliated with the University are the Evening Polytechnic School, the Huntington School for Boys and the Northeastern Preparatory School. Divisions of the University have been established at Worcester, Springfield, Bridgeport, New Haven, and Providence.

To co-ordinate more closely the work of the Divisions and Branches throughout New England with the work at Boston, a Regional Committee was organized May 5, 1920, for the purpose of "promoting, financing, supervising, and developing Divisions and Branches of Northeastern University." This committee is organized so as to insure the most effective and uniform service to all.

The Automotive School was started in 1903 to meet the ever-increasing demand for automobile instruction. Courses are offered for the owner, chauffeur, salesman, and mechanic, extending from three weeks to eight months, either day or evening.



# OUR PURPOSE

You have, doubtless, often heard it said that the only way to learn a trade is to serve time as an apprentice and learn by actual practice, and that the only way to learn the automobile business is to get a job in some garage and work it out by hard knocks. This same idea used to prevail concerning doctors, lawyers, architects, and, in fact, all the professions; but who would now think of trusting an important case or project to a professional man who has not completed a special course of training in some well-recognized school? The practical part of the profession is very essential, but how much more valuable it is if founded upon theory. It is not enough to know that a certain operation will cause a certain effect, an expert will know why this effect is obtained.

The automobile is one of the most complicated machines in the hands of the general public today. Every part has been specialized, every wearing contact fitted to a small fraction, every adjustment properly made, not only in the unit itself but in relation to the whole machine. An improperly adjusted or poorly fitted unit may ruin the whole machine, and what owner or garage man is going to risk a five thousand dollar machine in the hands of an inexperienced man?

The garage mechanic is paid for what he can do, and not for what he can teach some understudy. The garage owner's reputation rests upon his ability to put out work in an efficient, speedy, and economical manner. Almost anybody can wash a car, change tires, fill with oil, gas, and water, but when it comes to the finer adjustments and delicate repairing it is the expert who does the job and draws the expert's wages. If the understudy never gets a chance at these more technical jobs, how is he to learn to do them? This is just where the Automobile School comes in.

The only object of our course is to teach, very definitely and concretely, the theory back of every operation and process in the modern automobile. This theory is impressed upon the mind by the use of the actual parts, and sections in full operation — nothing is left to the imagination.

It is possible for a man to read law in a law office long enough to enable him to pass the bar examination; it is possible for a young man to work in an architect's office long enough to enable him to undertake the plans and specifications of a small building; it is possible for a man to learn the automobile business in a garage; but these are entirely too long and expensive methods. A little time and money spent in learning the fundamentals of the business under expert instruction will save years of time, and thousands of dollars in earning power. A course in our school is an investment, not an expense.

# NEED FOR MEN

Examine the "Want Ads" of any of our papers and you will see just what the situation is. Very rarely do you see an auto mechanic advertising for a position, whereas there are always calls for competent repair men. If you are considering the repair business, ask yourself a few points to help you in your decision:

1. **Am I capable?** This is rather a personal question and one you will have to determine largely for yourself. An interview with the Director of the Vocational Institute will help you, and will place you under no obligation. Your personal adaptability, experience, ambition, and preference should enter into your decision.

2. **What of the future?** Examine the following statistics prepared by the National Automobile Chamber of Commerce, and see what the future holds for the thoroughly prepared man, either as mechanic, salesman, chauffeur, garage owner, or service man.

Automobiles and Trucks registered in 1921.....	10,448,632
(Gain of 13% over previous year.)	
New cars produced during year.....	1,668,550
Wholesale value of output.....	\$2,212,068,420
Wholesale value of accessories output.....	\$1,260,000,000
Value of tire replacement.....	\$ 542,358,420
Capital invested.....	\$1,423,500,000
Cost of material.....	\$1,059,230,000
Employees in factories.....	186,000
Factory pay roll.....	\$ 299,098,780
Gasoline produced, gallons.....	5,153,549,318
Gasoline consumed, gallons.....	4,516,012,979
Tire casings produced.....	27,275,000

To take care of all this business after it leaves the producers, the public must depend upon the men as indicated below:

Dealers .....	13,452
Garages .....	43,582
Repair Shops .....	57,397
Charging Stations .....	4,248

# RAW MATERIALS CONSUMED IN MANUFACTURING MOTOR CARS AND TRUCKS, 1921

Iron and Steel, Tons.....	1,464,000
Production of iron and steel, 1921 (Iron Age)....	36,150,000
Per cent. used in mfg. cars and trucks.....	4%
Aluminum, Pounds .....	43,250,000
Production of aluminum, 1920 (Amer. Metal Mkt.)	198,000,000
Per cent. used in mfg. cars and trucks.....	22%
Copper, Pounds .....	83,425,000
Production of copper, 1921 (Survey of Current Business) .....	510,000,000
Per cent. used in mfg. cars and trucks.....	16%
Tin, Tons .....	12,510
Total consumption of tin, 1921 (Amer. Metal Mkt.)	60,000
Per cent. used in mfg. cars and trucks.....	20%
Lead, Tons .....	6,670
Production of lead, 1921 (Amer. Metal Mkt.)....	390,000
Per cent. used in mfg. cars and trucks.....	1.7%
Nickel, Pounds .....	3,400,000
Leather, upholstering, sq. ft.....	37,165,000
Total production of upholstering leather, 1921 estimated by the Tanner's Council at 54,000,000 sq. ft., but of which only 35,000,000 sq. ft was suitable for upholstering automobiles.	
Upholstering cloth, yards.....	5,357,000
Imitation leather, square feet.....	88,400,000
Lumber used in mfg. cars and trucks, ft.....	313,800,000
Glass (mostly plate glass), sq. ft.....	16,500,000
Production of plate glass, 1921, approximately....	55,000,000
Per cent. used in mfg. cars and trucks.....	30%
Top and side curtain material, yards.....	15,330,000
Hair and padding, pounds.....	16,000,000
Paint and varnish, gallons.....	5,900,000

Percentage of Increase of Car Registration over last year.

Massachusetts .....	31%
Maine .....	23%
New Hampshire .....	21%
Vermont .....	18%

## A Comparative Statement of Motor Vehicle Production Since 1899. Passenger and Commercial Combined.

Year	Number	Wholesale Value	Year	Number	Wholesale Value
*1899	3,700	4,750,000	1912	378,000	378,000,000
1903	11,000	12,650,000	1913	485,000	425,000,000
*1904	21,975	30,864,616	*1914	569,045	458,957,843
1905	25,000	40,000,000	1915	892,618	691,778,950
1906	34,000	62,900,000	1916	1,583,617	954,969,353
1907	44,000	93,400,000	†1917	1,868,947	1,274,488,449
1908	65,000	137,800,000	†1918	1,153,637	1,236,106,917
*1909	127,731	165,148,529	1919	1,974,016	1,885,112,654
1910	187,000	225,000,000	1920	2,205,197	2,232,927,628
1911	210,000	262,500,000			

Passenger Cars			Motor Trucks		
*1899	3,700	4,750,000	*1904	411	946,974
*1904	21,281	23,634,367	*1909	3,255	5,230,023
*1909	127,731	159,918,506	1903-1910	10,374	20,485,500
1910	181,000	213,000,000	1911	10,655	22,292,321
1911	199,319	240,770,000	1912	22,000	43,000,000
1912	356,000	335,000,000	1913	23,500	44,000,000
1913	461,500	399,902,000	*1914	25,375	45,098,464
*1914	543,679	413,859,379	1915	74,000	125,800,000
1915	818,618	565,978,950	1916	90,000	157,500,000
1916	1,493,617	797,469,353	†1917	128,157	220,982,668
†1917	1,740,792	1,053,505,781	†1918	227,250	434,168,992
†1918	926,388	801,937,925	1919	316,364	423,326,621
1919	1,657,652	1,461,785,925	1920	322,039	423,756,715
1920	1,883,158	1,809,170,963			

\*From U. S. Census reports.

†Production figures compiled by Automotive Products Section, War Industries Board, from sworn statements by manufacturers.

## CANADIAN REGISTRATION

Canada, with a population of nearly 9,000,000, has about 500,000 automobiles, or approximately 1 car to every 18 inhabitants, according to the report of the Government Bureau of Statistics.

“The most surprising increase,” a provincial official asserts, “occurred in the western provinces. Saskatchewan, which but a comparatively short time ago was a playground for the buffalo, today has 62,958 motor vehicles, mostly automobiles. Manitoba has 40,430, Alberta 38,750, and British Columbia 31,000.

“Prosperity of western farmers in recent years has resulted in the increased use of all kinds of cars. Canada is taking advantage of this growing demand. Automobile production in Canada was valued at \$137,420,351 in 1920, an increase of \$37,000,000 in twelve months. Investment in the industry is placed at \$53,906,506.—*N. Y. Evening Post*.

The Automobile industry is not only the second largest in the world, but it is developing much more rapidly than any other. When we realize that there were only 3,700 cars in 1899, and ten million in 1921, we get some idea of the future of the industry.

All of these cars, tires, batteries, and accessories must be kept in condition, and it is here that the efficient repairman is greatly in demand.

This demand will be greater and greater as production increases, and the man who gets in the business now, and grows with it, is the one will be the one that has the reputation for being up-to-date, and always accessories are being added every year, and the successful garage man will be the one that has the reputation for being up-to-date and always ready and capable of handling any new problem. The future of the repair business depends absolutely upon the man. If a man is capable, efficient, honest, and ambitious, he can set his own goal, and make of his work what he will; the opportunity is open.

**3. What returns may I expect?** The average repairman who is working under supervision earns from \$5 to \$10 a day; but when he is able to take over the supervision, direct men, and is more or less of an expert in shooting troubles, his earning power is greatly increased. The man who owns his own shop can make his income match his ability, as far as the opportunity is concerned, there is no limit. If one is an auto mechanic only, he has a certain capacity; if he can handle batteries also he has a greater capacity; if he specializes in starting and lighting and, possibly, vulcanizing, his field is greatly increased. There is a great opportunity just now, in the smaller towns, for the well-equipped, all-around repairman, who can handle any job that might come in: mechanical, electrical, or otherwise. In these communities, there is an opportunity to work up a remunerative and independent business.

**4. How shall I learn this business?** You naturally want to learn the business in the shortest possible time. There is only one way to do this, and do it right. You must put yourself in the hands of expert, experienced teachers, whose business it is to teach you both theory and practice, and who will give you abundance of experience on all makes of cars, and under the same conditions you will find when you are on the job. No garage man is going to take time, from a commercial job, to show an apprentice the details of the electric units, but this is exactly our job, and, with us, it is your privilege to stay until you do know, in detail, every function of an automobile.



Our Own Building

## **COURSES**

### **OWNERS AND PROSPECTIVE OWNERS**

If you own a car, you owe it to yourself to know more about that powerful piece of machinery that you handle every day. You owe it to your family and friends, who trust themselves to your care, and to the mercy of a powerful automobile. You owe it to your car, which will serve you well for both pleasure and business, if it is properly treated, and which will be a constant source of trouble and expense, if ill treated. that enormous amount of latent energy.

To know your car thoroughly, to care for it intelligently, to operate it efficiently, is one of the greatest joys of ownership. To be ignorant of the mechanical functions, proper care and operation of your car, is costly, often embarrassing, inconvenient, altogether unnecessary and to-day puts one in a class by himself.

### **OPERATORS**

It is an established fact that one cannot learn the automobile, or any other business, by using his hands only—one must use his head also. It is as impracticable and impossible for a new student to learn the automobile by starting in to dissect one, as it is to learn surgery by starting in to cut up a body. It is necessary to train the mind first. To get a foundation upon which to work, a certain amount of theory, expert explanation, and demonstration is worth a week's work of the old method of learning. This theory must be accompanied by unlimited practical work, so the hand may also be trained. Learn to do by doing, but know what you are trying to do before you put your knowledge into practice. Only a well organized school can produce an auto mechanic in a reasonable time, and give him that background of confidence so necessary to the good mechanic.



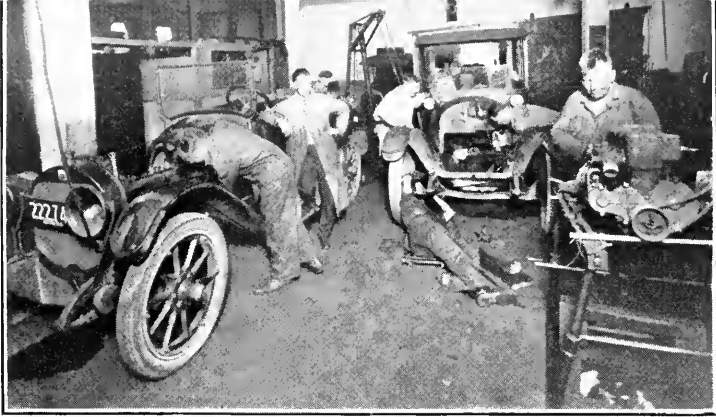
Part of Lecture Room

## CHAUFFEURS

The professional driver is a success only to that extent where he is able to meet an emergency, overcome the difficulty, and come out master of the situation. The chauffeur is no longer the demagog he used to be, shrouded in mystery, and altogether unreliable. Today he is one of the most respected, and, should be, one of the most dependable employees. One who can "get away" with a driving job will never be more than a common driver; but the one who knows his car, and can always be depended upon to have his car in shape to complete any trip successfully, is the one who will get the best paying and most steady position. A modern chauffeur should be able to find his own troubles, detect any weak points about his car, and at least supervise its repairs. He should know the function of each part, how to grind valves, clean out carbon, adjust carburetor, electric system, brakes, clutches, lubricating and oiling systems. High salaried chauffeurs are paid for what they know, not always for what they do.

## SALESMEN

"The Man Who Can Sell Owns the Earth" was never more true than in the auto-world. To sell goods you must know them thoroughly, and the man who tries to sell autos, without a thorough knowledge of the fundamental principles underlying the modern pleasure car or truck, is going to be snowed under by the clever salesman who can talk intelligently, not only about his own product, but about the industry in general. It is not enough to be familiar with one's own line, but it is essential that he should know the fundamental principles upon which each part is built. How better can one learn the principle of the automobile than in a school where both the theoretical and practical are taken up in detail, and carried through to the conclusion, on all makes of cars and accessories?



A Corner of the Repair Shop

Don't knock your competitors' goods, but gain your prospects' confidence by an intelligent, expert explanation of just what your product will do. A dollar invested in specialized knowledge will return many fold, in commissions.

## REPAIRMEN

The repairman is to the garage much the same as the chief surgeon is to the hospital. It is necessary that he know all makes of cars, their peculiarities, strong and weak points; and be able in the shortest possible time to diagnose any trouble. Without a thorough knowledge of elementary electricity, its behavior and control, it is not probable that one will be able to detect trouble in a starting and lighting or ignition system. Without a knowledge of elementary physics and mechanics, one is not thoroughly competent to detect troubles in chassis or engines. Following a well laid-out course, in a well organized and modern equipped school, is the only way to get a real knowledge of automobile mechanics. In our school, we go thoroughly into the principles of construction and operation of the motor car and accessories, give practical work in overhauling all kinds of cars, trouble-shooting, repair estimates, stock records, garage courtesy; and, in fact, everything possible to turn out a well rounded, practical, efficient, dependable repairman.

## AUTOMOBILE STARTING, LIGHTING AND IGNITION

The heart of the modern automobile is the Electric Equipment. The real demand today is for the mechanic who thoroughly understands Starting, Lighting, and Ignition Systems in all their relations. He must not only be able to locate the trouble quickly, and to a certainty; but he must be able to remedy the fault, whatever it may be. Our course in Starting, Lighting, and Ignition is very comprehensive in its makeup. The old idea, that electricity is an extremely hard subject to understand, is all a mistake. Electricity, as applied to the automobile, is very simple and easy to understand when explained in the proper light.





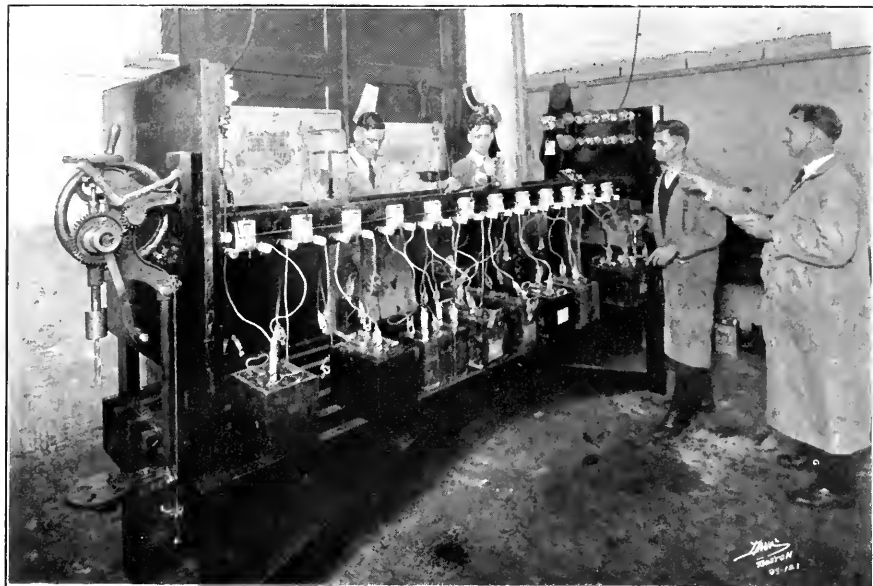
**Part of Special Electrical Shop**

Our Electrical Laboratory is in a room by itself, where will be found all of the latest types of starting, lighting, and ignition units both as working models and in the sectioned form especially arranged for instruction purposes. The latest types of testing stands, measuring instruments, lathes, drills, etc., are all available to the student.

Each of the following topics will be dealt with in an exhaustive manner: Elementary electricity and its application to automotive equipment, measurement of electric current, induction, magnets and magnetism, electro-magnetic induction, generators, motors, fields, armatures, windings, cutouts, engine connections, switches, protective devices, lamps, magnetos, instruments, ignition systems of all kinds, ignition wiring, timing, "shooting trouble," and rebuilding entire units.

The course is complete in itself, and a student may enter at any point in the course that his experience or preparation will permit. The general explanations are given in lecture-demonstration form on the actual equipment before the entire class.

Most of the time, however, is spent in actual handling and repairing of electrical units in our special shop, "Shooting trouble" on actual jobs, and carrying on the work the same as in a regular commercial service station.



Battery Charging Table Made by Students

## BATTERY COURSE

It is estimated that there are more than 5,000,000 Automobile Storage Batteries in use in United States alone, with an annual production of about 2,000,000. To take care of this business there are only 4,248 charging stations.

To most mechanics the Automobile Storage Battery is a closed book. They know it is a sealed box containing some kind of a liquid to which they add from time to time a little distilled water. They know nothing of its operation, care or repair; and, when they find the trouble is in the battery, they are unable to do anything but replace it with a new one.

The storage battery, as used today, is one of the simplest pieces of equipment to repair or rebuild when it is properly understood. For a few dollars a battery can be transformed from a worthless unit to a valuable and indispensable source of electrical energy. Battery service stations all over the country are calling for men who are competent to analyze battery trouble and able to repair the trouble in an efficient and economical manner. This kind of work is not seasonal, as a battery needs attention the year round.

The equipment necessary to start a Battery Service Station is not at all extensive and most of the now prominent and prosperous stations started with a few hundred dollars investment and a knowledge of the battery business. A battery department is a very valuable asset to any garage, and in fact, many times has proven to be the best source of revenue. A modern garage should be complete in every way, so that nothing is sent out and all profit is kept within the organization.



Practical Work in the Welding Shop

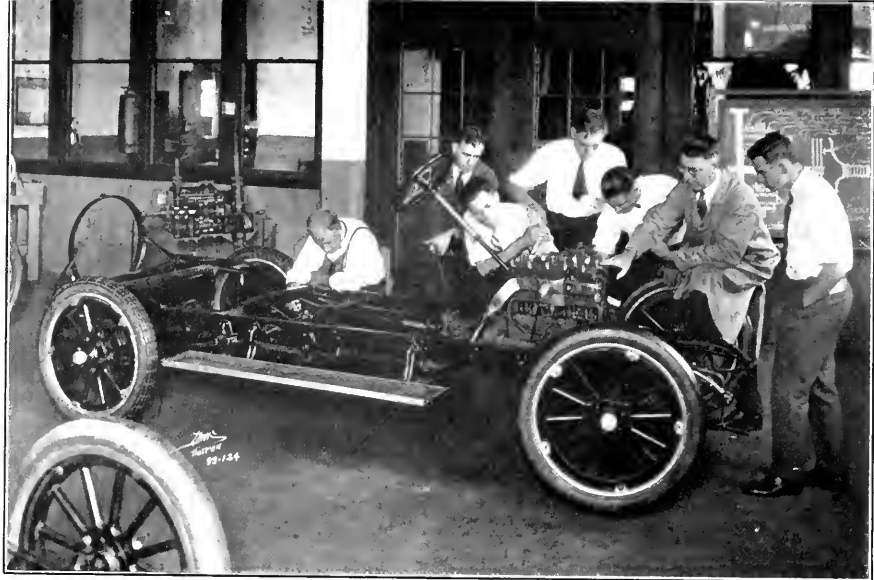
Radio is getting to be quite a popular thing all over the United States, and it has put such a demand upon the storage battery business that it is, at times, almost impossible to supply the demand. The re-charging of these batteries has become a regular business, and the demand is constantly increasing.

Wherever there is an automobile or radio set there is a storage battery, and every battery must have service.

## ACETYLENE WELDING

This is a course designed for the man who wants to become proficient in the use of the welding and cutting torch.

Gases, torches, metals, fluxes, gauges, etc., are all explained and demonstrated in the class room by expert welders, after which each student is given a complete outfit and taught to do by doing under expert supervision. Iron, steel, brass, bronze, aluminum, and all metals are used; and all types of repair and commercial jobs are handled by the students. This is not necessarily a course given in connection with our auto course, but is for anyone who desires a thorough training in the principles and practices of oxy-acetylene welding. Anyone taking this course conscientiously will know the welding game and be able to get employment as a welder at regular welder's wages.



Practical Work from the First Day

## OUTLINE OF COURSES

### OWNERS

This is a short, intensive course of two weeks specially set up for the owner who wants to acquaint himself with the fundamental principles of an automobile. It includes lecture, demonstration, and practical work as follows:

Gasoline as an explosive and a means of furnishing power.

The internal combustion engine, parts and their functions.

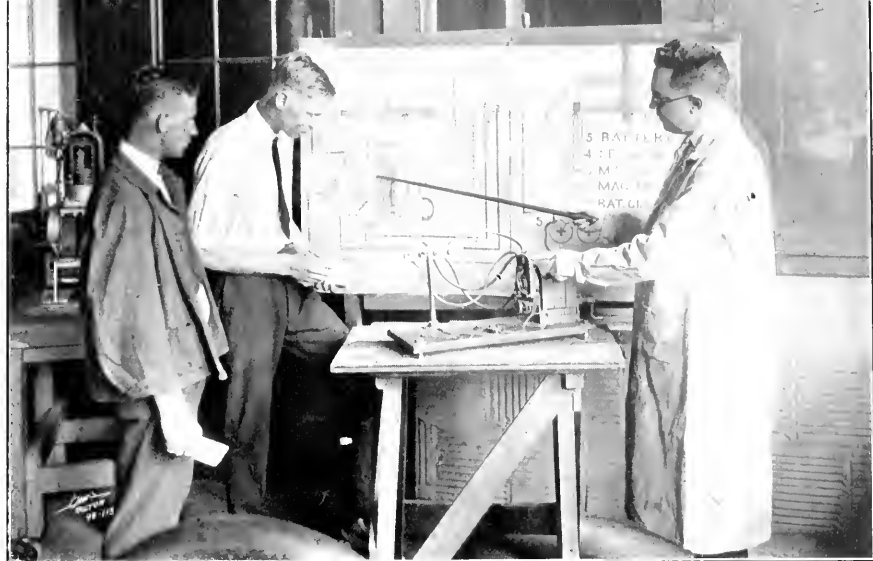
Cycle and compression, operation of valves for exhaust and intake; valve timing; adjustment of tappets; firing order as indicated by valve action; carburetors and their adjustment; cooling systems and their respective advantages; causes for overheating; carbon deposits and treatment; theory of electric lighting and starting systems; ignition and trouble shooting; magnetos; coils; distributors; clutches; transmissions; differentials, their use and care.

### OPERATORS

This is a four weeks' day course or a twelve weeks' evening course for the professional operator, salesman, and owner who wants more than an ordinary knowledge of the main points of a car. This course gives a professional and thorough knowledge of every part of an automobile, and gives it in detail.

Lectures and demonstrations cover:

1. Gasoline as a fuel, theory of explosion, compression, valves.
2. Two and four cycle engines, 1-2-4-6 cylinder engines with cycle readings, connecting rods and their adjustments.
3. Eight and twelve-cylinder engines, valves and valve-timing.
4. Carburetors and fuel systems — all types.



Personal Instruction In Electric Units

5. Carburetors, difficulties and adjustment, rules for starting.
6. Cooling systems, thermo-syphon, pump, air.
7. Elementary electricity and battery ignition, spark plugs, coils, etc.
8. Vibrating coils, storage battery, timing.
9. Magnetos — high and low tension.
10. Ignition difficulties, distributors, primary and secondary current.
11. Starting systems, mechanical, air, gas, electrical.
12. Electric starting and lighting — single and double unit.
13. Clutches and sliding gear transmissions.
14. Planetary and friction disc transmissions. Universal joints, differentials, steering gears, brakes, springs, tires, body finish.

Laboratory work gives practical work in all the following:

1. Location and function of all parts of a car.
2. Grinding of valves on all types of cars.
3. Test for compression, causes for leaking and their remedies.
4. Connecting rod bearings and adjustment.
5. Overhauling a sliding sleeve engine (Knight).
6. Valve timing on 4-6-8 cylinder motors.
7. Dissection of all types of carburetors and their adjustment.
8. Carburetor adjustment while in action.
9. Vacuum system — its action and installation.
10. Storage tanks, feed pipes, and their care.
11. Throttle control, accelerators.
12. Proper starting of engine, and running adjustments.
13. Cooling systems, all types on all cars.
14. Pump packing, radiator repair, cleaning.
15. Ignition systems, complete taking down and rewiring.
16. Causes of leakage, misfiring and spark knock.
17. Location of trouble.



Personal Supervision of Every Repair Job

18. Starting and lighting systems, their installation and upkeep.
19. Types, windings, wiring, insulation, troubles and repair.
20. Clutches: cone, disc,—troubles and repair.
21. Planetary transmissions,—advantages, disadvantages and repair.
22. Sliding gear,—location, operation, repair.
23. Differential, disassembling, repair and adjustment.
24. Oiling systems: splash, pump,—their repair.
25. Bearings: roller, ball,—their adjustment and repair.
26. Axles, wheels,—their lubrication.
27. Tires, tubes, and shoes,—their care and repair.
28. Brakes, relining and adjustment.

All laboratory work is done on real cars, some of which are sectioned to meet the requirements of the students.

## THE REPAIR COURSE

This course is prepared for the man who wishes to prepare himself to become a really expert mechanic, capable of handling any kind of job that may come to an ordinary repair shop. We conduct a regular commercial garage which assures our students all the practical work that is to be found in any public garage. There is always in attendance a corps of capable instructors whose business it is to see that each student is receiving just the kind of experience that he needs. As the Operators' Course is a prerequisite to the Repair Course, there are no class lectures connected with the work; everything is strictly practical. In this course we apply the principles learned in the previous course. Cars are completely dismantled, overhauled, and rebuilt from one end to the other. Every student is given a wealth of experience on all types of jobs, both as helper and on his own initiative, so he will be able to go ahead with any repair job when he is out by himself.



Special Work in Auto Painting

## CHAUFFEURS

All our driving lessons are given on regular standard touring cars with standard shift, and equipped with a double set of brake and clutch pedals to enable the instructor to take immediate control in case of emergency. Each lesson is a full hour long and is given in all conditions of traffic in order to give that self-reliance and dependability so necessary to the good driver. By the experimental method each student is taught the proper methods of starting and stopping, turning, backing, parking, and all the traffic regulations. Seven hours or about 100 miles of actual driving under expert supervision is given before the student is taken to the State Board of Examiners to get his license. No extra charge is made for the use of the car or trip to the examiners, and if the student fails in his first trial, he is given the use of the car for another trial without extra charge. Everybody driving a car in the State of Massachusetts must pass this examination and possess the regular license.

## AUTOMOBILE PAINTING

### 1. Cleaning of Chassis

The complete preparation of the chassis for the first coat of paint, including:

- A. Removal and checking of spare parts, such as tires, hub caps, bumpers, lights, etc.
- B. Removal of dirt and grease and the application of paint remover.

### 2. Preparation of Body

- A. Removal of wind-shield, spare tire carrier, head lamps, floor boards, battery, hood, door latches, etc.
- B. Removal of paint.



Part of Auto Trimming and Upholstery Shop

3. Application of priming coat, sanding, sealing, color, varnish, rubbing, finishing, striping and monogram work.
4. Lecture and demonstrations on mixing of colors, varnishes, etc.
5. Reassembling of parts.  
Removal of stains from the glass and polished surfaces, adjusting nickel work, lamps, tires and accessories.
6. Estimating
  - A. Sand and varnish.
  - B. Sand, color, and varnish.
  - C. Burn off and complete job.  
Cost of colors, varnish, oils, remover, sand paper, steel wool, nickel work, brushes, how to figure cost of job including material, labor, overhead.
7. Shop Courtesy; how to advertise; how to meet the customer; reasonable profit; record keeping; inventory; supplies and stock to keep on hand.
8. Location of Shop  
Light; space per car; how to arrange a finishing room.

## UPHOLSTERY COURSE

1. Complete rebuilding and repair of springs, seats, and cushions.
2. Recovering of seats and cushions, in leather, imitation leather or fabric.
3. Cleaning and renovating of all kinds of upholstery.
4. Spring suspension, binding, padding, and installing on all types of inside coach work.
5. Measuring, sewing, fitting, and applying all kinds of fabrics on closed cars.





Practical Lead Burning

6. "Slip-cover" making in all its phases.
7. Measuring, sewing, fitting, and applying open car tops and curtains in all materials.
8. Repair and replacing of closed car roofs.
9. Top paddings, bow coverings, lights, fastenings, visors.
10. Estimating a job, shop courtesy, business ethics, record keeping, inventories, how to order stock.
11. Location of shop, equipment, space, advertising, where to get business.

## STORAGE BATTERIES

The storage battery course is intended for the man who wishes a thorough knowledge of the automobile storage battery, and will fit him to handle regular commercial work, either in a service station of his own, or working for others.

Taken in connection with the lighting and starting course, it should prove a valuable asset to the automobile electrician, but it is in itself a complete course.

The course consists of a series of lectures, given alternately with shop work, and covers a period of three weeks days, or eight weeks evenings, two evenings a week.

In the lecture room the theory and principles involved in this work are thoroughly explained, and the student is expected at this time to take notes to be followed up in the shop work later.

These lectures cover:

History of storage batteries of the Plante and Faure types.

Uses to which storage batteries are put.

Relationship of the battery to other electrical equipment of the automobile.



Shop and Demonstration Room

Equipment used in battery service stations; cost, arrangement, and care of same.

Parts of a storage battery and relationship to each other.

Assembling and disassembling batteries (methods used).

Lead burning (methods used).

When a battery should be opened and when not.

Production of electricity in a storage battery.

Chemical action in a battery.

Fundamentals of the electric circuit as applied to automobile electric systems.

Electrical calculations, as applied to battery charging, and costs to charge.

Operation of the charging board during the day, and how to manage same over night.

Cadmium and volt meter testing.

Use of the hydrometer.

Mixing and use of acid solutions.

Estimation of charges to the customer.

Business ethics.

In the battery shop, the student tears down, repairs, and rebuilds batteries complete, and has supervision of the charging board. The work is done on a regular commercial basis, as the battery department not only takes in work from the general public, but makes and sells a great many new batteries. A competent instructor is in charge at all times.



Part of Starting, Lighting, Ignition Room

## STARTING, LIGHTING, IGNITION

Engine principles—Fundamental electricity—Ohm's law—Resistances in series—Resistances in parallel—Voltage drop—Electrical measurements—Determining polarity—Storage batteries—Testing storage batteries—Charging storage batteries—Care of storage batteries—Repairing storage batteries—Preparing storage batteries—Storage battery capacity—Charging board—Rectifiers—Repairing battery posts—Replacing battery terminals—Magnets and magnetism—Electro magnets and electro-magnetism—Strength of magnetic fields—Applying compass and hand rules to determine electrical effects—Construction of meters—Induction—Ignition systems—Ford vibrator coils—Installing ignition units—Testing coils—Testing ignition systems—Resistance units—Repairing troubles in ignition systems—Cleaning and testing spark plugs.

Magnetos, high and low tension—Ford magnetos—Testing magneto armatures—Repairing and replacing magneto armatures—Timing a magneto—Replacing cam on magneto shaft—Adjustment and care of breaker points—Timing magneto armature and distributor gears—Testing and replacing of distributors—Replacing collector rings—Wiring distributor to firing order of engine—Oiling of battery ignition and magneto parts—Replacing armature bearings—Testing condensers—Purpose and adjustment of safety spark gap—Dual ignition systems—Duplex ignition systems—Recharging magnetos—Overhauling magnetos—Generators—Different types of generators used on the different automobiles—Installing generators and motors—Current regulation—Adjusting generator's output—Thermostat control action—Automatic and manual cutouts—Adjusting of relay or cut-out—Brush positions—Adjusting brush spring tension—Cleaning commutator and brush—Replacing brushes—Testing and replacing of meters—Removing end play in armature shaft—Replacing bearings—Turning down commutators—Under-cutting mica.



Shooting Trouble

Armature windings—Testing of armatures—Repairing open or short circuits when possible in windings—Rewinding of armatures—Field windings—Repairing field coils—Internal connections of units—Repairing overrunning clutch—Care in replacing oil-retainer and spacer washers—Overhauling generators—Starting motors—Types of starting motors—Starting motor switches—Starting motor cables—Selection of starting motor brushes—Replacing bearings or bushings—Wiring of starting motor systems—Insulation of terminals—Counter electromotive force—Alignment of starting motors—Gear ratios—Lubrication—Finding starting motor torque—Overhauling of starting motors—Lighting systems—Calculating wire sizes—Fusing lighting circuits—Junction boxes and blocks—Lighting switches—Installing stop or spot lights—Selecting or replacing lamp bulbs—Insulating lighting wires—Repairing lighting switches—Rewiring lighting systems—Replacing lamp connectors—Focusing—Lighting system troubles—Methods of dimming lamps—Resistance and reactance coils—Repairing and installing electric horns.



Garage Floor

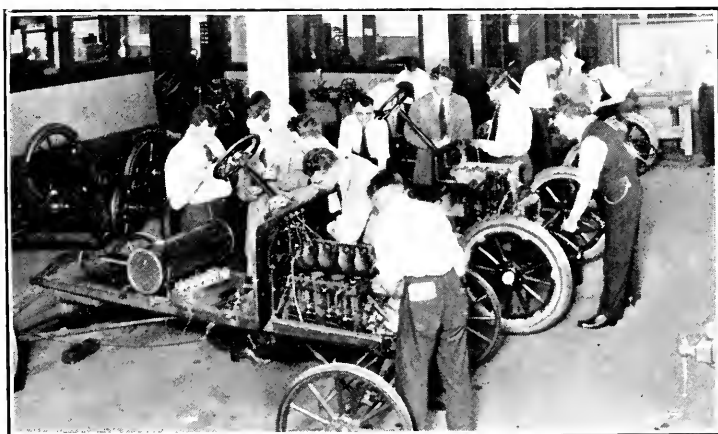


The "Why" of the Carburetor

## EQUIPMENT

### Building

Our building is 60 feet by 150 feet, three stories high, specially built for an Automotive School. It is so arranged that each department has a room by itself, all exhausts are conducted to the open atmosphere. Toilets, rest rooms and private lockers are found on each floor. Everything is kept neat and clean, and everything possible is done to make the student at home, happy and contented. Our building is adjacent to the New England Conservatory of Music, and in the locality are Tufts Medical College, Boston University, the Opera House, Symphony Hall, and other large public buildings, assuring the very best environment.



Some of the Sectioned Equipment

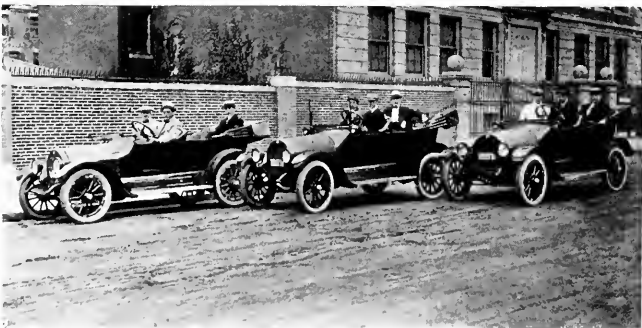


Class Instruction in Vulcanizing

## EQUIPMENT

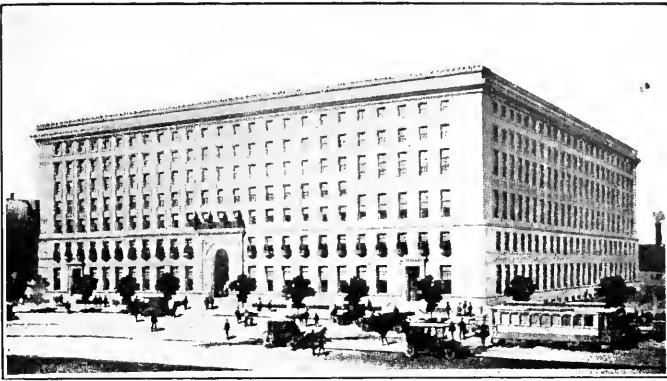
We have the best equipped Auto School in New England, and in some respects the best in the East. We pride ourselves in keeping up-to-date, and as soon as a new feature is placed on the market, it will be found in our school. The manufacturers realize that it is of great advertising value to place their products before our students, and are always anxious to send us anything they have. Part of our engines are especially sectioned and mounted to enable us more thoroughly to teach the true operation under its most natural condition.

Our electrical and tire laboratories are separated from the main engine and chassis room, and are especially set up to do justice to these subjects. Our lecture room has a seating capacity of 150, with special apparatus and charts for demonstration. The repair shop occupies an entire floor, and is conducted in every respect as a modern garage. The automotive machine shop is equipped with lathes, shapers, millers, boring mills, and everything necessary to the complete rebuilding of an automobile. The welding and all other departments are separated into their own rooms.



Students Learning to Drive

# ACTIVITIES



The Association Building

## BOSTON YOUNG MEN'S CHRISTIAN ASSOCIATION

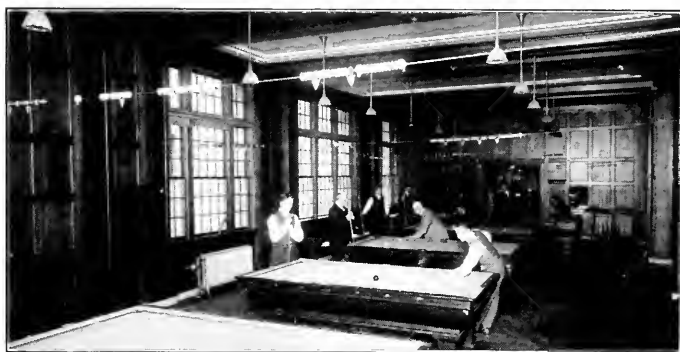
The Boston Y. M. C. A. stands for more than a means of training in its several schools. It stands for an all-round development. The main building is one of the finest in America. The gymnasium, game rooms, swimming pool, baths, rest rooms, libraries, club rooms, restaurant, dormitories, lockers, lectures, entertainments, etc., are the best and most up-to-date found anywhere. All of these privileges, except the gymnasium and swimming pool which may be secured by paying a small fee, are open to all automotive students. We urge all our students to avail themselves of the general activities as offered in the main building.

## DEPARTMENT OF RECREATION AND HEALTH

Developed by the late R. J. Roberts, a pioneer leader in physical education, this department offers unparalleled facilities for play, health-building, physical improvement, and training for athletics of all kinds.

Three gymnasiums, a twelve-lap running track, two large exercise rooms, boxing and wrestling rooms, handball and squash courts, bowling alleys, tennis courts, an outdoor running track, showers, steam baths, massage rooms, electric cabinet baths, and the big, clear pool of invigorating salt water, filtered and kept at a proper temperature — these and many other similar facilities provide all a man could wish for in the way of physical equipment.

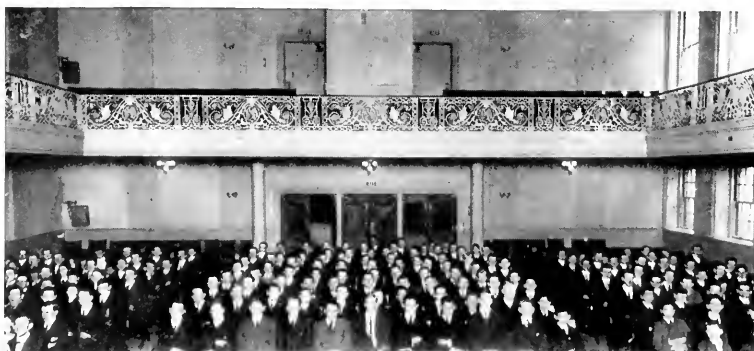
Gymnasium, swimming, and game classes are held by competent leaders at every practical hour of the day and evening. Physical and medical examinations are part of the services and may be had on request. Private instruction can be arranged in swimming, boxing, wrestling, and corrective exercises.



Games of Skill Keep Eyes and Hands Keen and Steady

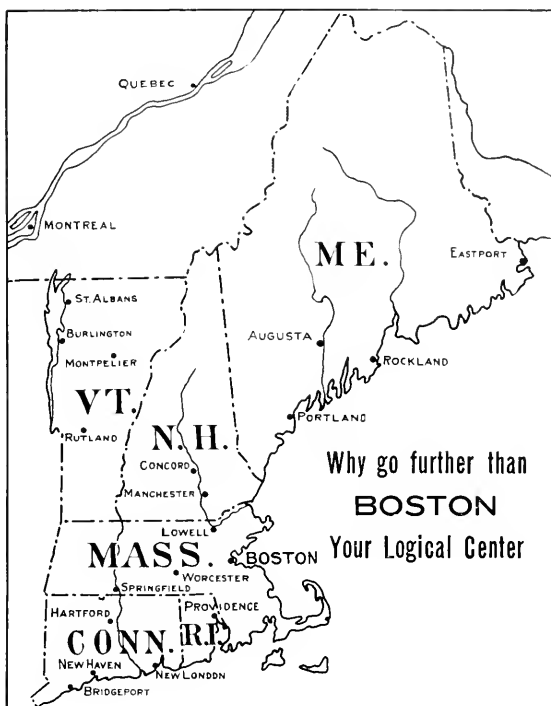
## BOSTON AS A CENTER

Boston is known as the educational centre of America. Some of the greatest educational institutions in the world, both academic and technical, are within a few minutes of our school. Boston is the Mecca for the automobile industry of New England. Our streets are literally alive with pleasure and business cars of every description. Every car and accessory company has its main New England distribution and sales office here, and it is only natural that the first and largest Automobile School in America should be located in Boston.



Lectures, Entertainments and Social Events are Held in Bates Hall





Boston still retains her reputation for being the center of learning on this continent. In the immediate vicinity are nine institutions of higher learning, such as Harvard, Boston University, Northeastern University, Radcliffe, Tufts, Wellesley, Massachusetts Institute of Technology, etc., together with a dozen or more special and technical schools such as Franklin Union, Wentworth Institute, New England Conservatory, Lowell Institute, etc.

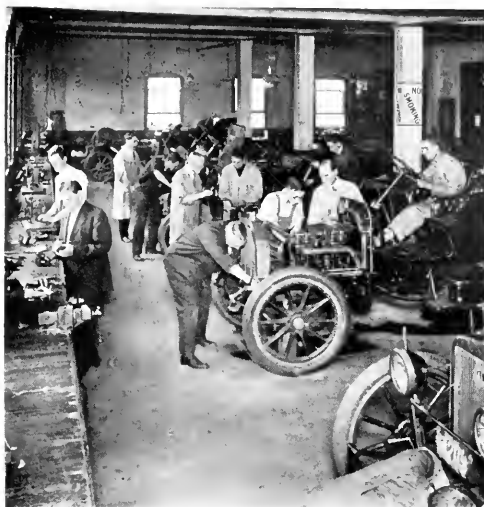
Students from out of the city will find it well worth their time to see and study these points of interest. Tourists come thousands of miles at a cost of hundreds of dollars to see what you may see for practically nothing. Each one of our classes is organized with its regular officers, and from time to time sight seeing trips are organized for out-of-school hours — especially on Saturdays.

Boston is recognized by everyone to be one of the most beautiful and interesting cities on the American continent. Boston proper has a population of over 800,000 and Greater Boston, made up of some forty cities within a radius of twelve miles, has a population of 1,900,000. It was first settled in 1630, and ever since has been the leading spirit in the development of our country.

Among some of the points of historical interest might be mentioned: Bunker Hill Monument, marking the location of the Battle of Bunker Hill; Old North Church, from which Paul Revere observed the lantern signals; The Home of Paul Revere; Street on which the location of the Boston Massacre is marked; Old South Church; Faneuil Hall; Old State House; Boston Common; Public Gardens; Navy Yard, etc. Boston is also noted for its beautiful buildings and parks. Trinity Church on Copley Square is a beautiful example of Romanesque style of architecture. The Public Library near by is one of the most beautiful library buildings in the world. It contains more than 1,000,000 volumes, and is open to the public every day. It was erected in 1895 at a cost of \$2,500,000. The Art Museum is always an interesting place to visit. It is a comparatively new building, erected at a cost of \$1,200,000, and as a whole is excelled only by the Metropolitan Museum of New York City.



Friends Made Here Will be an Asset to You for Life



Practical Work in One of Our Shops

## **PERSONAL**

### **FOR OUT-OF-TOWN STUDENTS**

The stranger from out of our city need have no hesitancy in coming to Boston. It is the purpose of the Y. M. C. A. to take care of young men who are away from home. Rooms in our dormitory may be secured for \$3.00 a week up, or we can find a rooming place for you near the school at very reasonable rates. Most people prefer to take their meals at restaurants where they can get just what they want and get it just when they want it. This should cost them from \$6.00 a week up.

If you arrive in Boston at the South Station, take the subway to Park Street station and change to any Huntington Avenue or Jamaica car. This will bring you to the main Y. M. C. A. building.

If you arrive at the North Station, take the elevated to Park Street station and transfer to any Huntington Avenue or Jamaica car.

### **WHAT WE STAND FOR**

Our twenty years of experience has taught us just what a real Auto School should stand for and what should be expected of it. We therefore assume responsibility as follows:

1. To teach thoroughly the principles of automobile construction, repair, upkeep, and operation.
2. To illustrate these principles by definite, concrete examples and demonstration on the real apparatus itself.
3. To keep on hand for student use all types of equipment to illustrate principles of construction and operation of internal combustion engines, chassis, oiling and cooling systems, starting and lighting systems, clutches, transmissions, differentials, etc.



One of Three Well-Equipped Libraries

4. To give commercial experience in a real commercial garage, on real commercial jobs, such as the student will be called upon to do when he gets out into the world.

5. To give willing, expert instruction, by sympathetic instructors who are always ready to help.

6. To limit the enrollment in each class to a number sufficiently small to give every student the maximum opportunity to get a first-hand, personal knowledge of every phase of the work.

7. To conduct all our business dealings in a businesslike way, so the student may become accustomed to business operations in the auto industry.

8. To be your personal advisor in any way in which we may be able to help you. We are only too glad to give vocational, personal, or business advice to our students.

9. To conduct our school on an economical basis, and to give instruction for the least amount of money consistent with efficiency.

10. To make it our business to give value received for every dollar and make every student a satisfied booster for our school.

The policies of this school are all drawn up by the Boston Young Men's Christian Association, which is directly responsible for its administration and conduct. The Boston Association has the goodwill of this community, which it has served for seventy years and in which it has invested \$1,250,000 in property.

The Automotive School is now in its twentieth year of successful operation, and has over 20,000 graduates to testify to its efficiency and thoroughness. We are now registering about 2,000 students a year. We have no stockholders, declare no dividends, pay no rent, are not in the business for money, and our policy is "Minimum fees consistent with efficiency." Our best advertising is from our satisfied graduates, and this goodwill is worth more to us than any amount of money. You will always feel that you are getting a square deal and full value for your dollar.

## THE COURSES

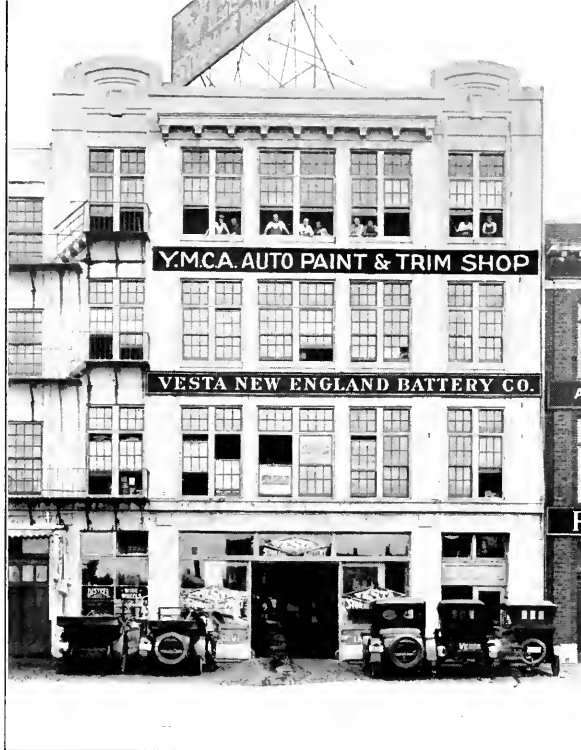
Being the oldest Auto School in America, it is perfectly natural that we should have evolved the best and most efficient methods of instruction. Our courses are the result of years of study and experience. Every lecture and shop lesson is covered by a printed outline, so both teacher and student know exactly the context of the day's work, and the general sequence of subjects. Written "exams" are given at short intervals so we may check up on any student who is not getting all he should; special help is given those students who seem to have difficulty in grasping any phase of the subject.

## THE INSTRUCTORS

Our teachers are selected from among the men who have had years of experience in their respective trades. Only men of highest character and with teaching ability backed with years of experience are found on our staff. Our policy is to give definite, thorough and practical instruction, and to present the subjects in such a clear, concise manner that they can be mastered by anyone of average intelligence and willingness to learn.



Corner of Vulcanizing Shop



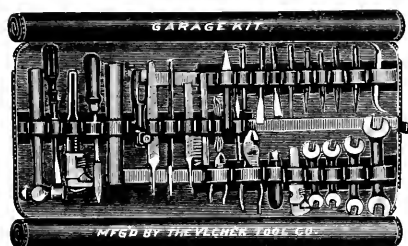
Our Auto Paint and Trim Shop on Beacon St.—Commonwealth Ave.

## SCHEDULE OF COURSES AND PRICES

	DAY				EVENING			
	Hrs.	Days	Weeks	Cost	Hrs.	Days	Weeks	Cost
1. Owners.....	6	5	2	\$35.00	2	2	8	\$35.00
2. Operators.....	6	5	3	50.00	2	3	12	50.00
3. Repair.....	6	5	8	100.00	2	3	12	75.00
4. Road.....	8	By appoint		30.00	8	By appoint.		30.00
5. Welding.....	6	5	2	50.00	2	2	8	50.00
6. Auto Painting.	7½	5	24	30.00	2	3	36	15.00
				Month				Month
7. Ignition.....	6	5	6	75.00	2	2	16	75.00
8. Battery.....	6	5	3	40.00	2	2	8	40.00

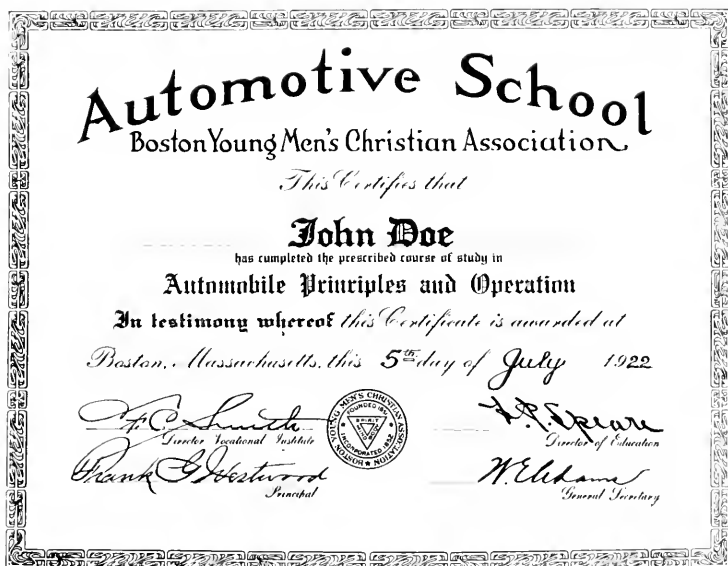
The above prices include membership in the Y. M. C. A. for duration of course. A discount of \$5.00 per course will be allowed for each additional course taken in combination, when registered for in advance. One-third of the tuition must be paid at registration, the balance in weekly payments equal to total tuition divided by number of weeks in course. **A ten per cent. discount is allowed for cash payment in advance.** Refunds are made only in case of personal sickness.

**Books.** Reference books are not required, but we strongly recommend that every student secure a copy of a standard text-book in each of the courses. These will be of inestimable value in future work. They range in price from \$3.00 to \$5.00.



Special Repair Tool Set

**Tools.** All tools are furnished free of charge by the school, except those for the special ignition and repair courses. In these courses each student is required to purchase a standard set of tools, which we are able to furnish for \$10.00. Each student is furnished with a compartment in which all tools, supplies, and clothing are kept.



### CERTIFICATE

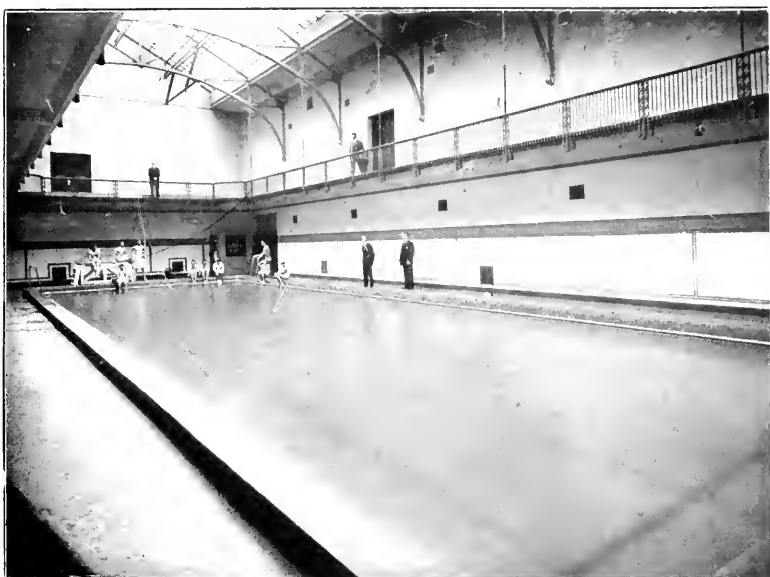
To those completing our several courses and satisfactorily passing the examination, we award a certificate showing the work accomplished.



The Boston Y. M. C. A. Automotive School is the oldest school of its kind in America, being established in 1903. Over 20,000 students have finished the course here and are now profiting from their training. The engine shown above was the first internal combustion engine ever used for instruction purposes in an Automobile School in America and as far as known the first in the world.

The gentleman standing by the engine is "Uncle Charles" Pierce, our congenial Registrar and "everybody's friend." You will enjoy meeting him.





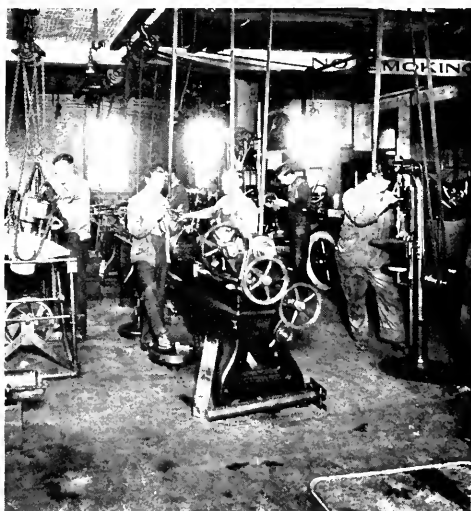
The Finest Salt Water Pool in America



Where the Inner Man Is Satisfied



Tracing Lighting Circuits



Part of the Machine Shop











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